A genre-based investigation of Introduction and Method sections of research articles in clinical psychology:

A systemic-functional perspective

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[1] This thesis document (including 'Table of Contents') uses hyperlinks for easier navigation. After clicking on a hyperlink (e.g., Chapter 1 Introduction), you can return to the previously displayed page by right-clicking anywhere on the screen and selecting 'Previous View' from the drop-down menu.

Abstract

This thesis investigates language use in high-impact medical journal articles that report on randomised controlled trials within the field of clinical psychology. Randomised controlled trials (RCTs) are considered *the gold standard* for assessing the effectiveness of treatments. Since the 1990s, there have been growing concerns about the quality of RCT reporting, leading to the creation of The Consolidated Standards of Reporting Trials (CONSORT) Statement. Although this document provides a medical perspective on the reporting requirements, it does not provide explicit guidelines on language use. Thus, this study aims to examine the linguistic construction of a trial's justification and scientificity in Introduction and Method sections of RCT reports concerned with depressive and anxiety disorders. Following John Swales' Creating-a-Research-Space (CARS) model, the generic structure of research article (RA) Introductions has been widely explored in studies on English for Specific Purposes (ESP). Within the ESP tradition, there has also been an increasing interest into the generic structure of RA Methods, especially with reference to their comprehensiveness and ability to demonstrate scientific rigour and credibility. However, the lack of a functionally-oriented linguistic framework has limited ESP research to predominantly quantitative studies of lexicogrammatical forms. To conduct an in-depth qualitative analysis of genre-sensitive language use, this thesis has adopted a functional approach to genre grounded in systemic functional linguistics (SFL). More precisely, it employed the "Sydney School" perspective on genre and James Martin's modelling of discourse semantics to explore the language patterns that enact the social practices of justifying a trial and demonstrating its scientificity. The findings indicate that RCT Introductions and Methods are structured as research warrants and methodology recounts, respectively. Furthermore, additional genre embedding is used to deepen trial justification or zoom in on different aspects of RCT methodology. At the discourse semantic level, a balance between objectivity and persuasion is achieved through a wide range of implicit appraisal resources. The results of this research carry important theoretical implications for SFL genre theory and ideational discourse semantics. In addition, SFL pedagogical tools such as *the teaching-learning cycle* and *the 3x3 toolkit* can be used to recontextualise the findings with a view to scaffolding literacy in a (post-)tertiary environment.

Statement of originality

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Dragana Stosic

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The system networks in this thesis contain the symbols and abbreviations that are in line with the conventions established in Martin (2013) and Halliday & Matthiessen (2014).

/	conflated categories (e.g., Medium/Carrier)
↘	realised by
^	followed by (e.g., Classification ^ Description)
+Function	insert the function (e.g. +Subject)
Function: class	function-class relation (e.g., Predicator: non-finite verbal group)
#^	Initial position in a functional configuration (e.g., #^Compliance)
^#	Final position in a functional configuration (e.g., ^#Standardisation)
^(^)#	Final or penultimate position in a functional configuration (e.g., ^(^)#External Involvement)
[[ ]]	embedded clause/ genre
[[[[ ]]]]	second-order embedded genre
[[[[[[ ]]]]]]	third-order embedded genre
=, +, x	(co)elaboration, extension, enhancement
' '	in-text references to systemic features
+/-attitude	positive/negative attitude (e.g., +valuation)
add	additive
alt	alternative
adj. gr.	adjectival group
attr.	attributive
BMJ	British Medical Journal
CARS	Create-a-Research-Space
CC	contextual configuration
Circ	circumstance
cond	condition
CONSORT	Consolidated Standards of Reporting Trials
consq	consequence
diff	difference
E	Evidence
ESP	English for Specific Purposes
GSP	Generic Structure Potential
JAMA	Journal of the American Medical Association

Med.	Medium
n	number
n. gr.	nominal group
NEJM	New England Journal of Medicine
P	process
poss.	possessive
prep. phrase	prepositional phrase
R	Record
RA	research article
Rg	Range
RCT	randomised controlled trial
Rsp	Response
RST	Rhetorical Structure Theory
SFL	systemic functional linguistics
simil	similarity
simul	simultaneous
succ	successive
T	Topic significance
TLC	Teaching-Learning Cycle
v. gr.	verbal group
YLDs	years lived with disability

Illustrative examples are numbered consistently throughout the thesis using the following convention:

(1.1) Example	The first number represents the Chapter number; the second number represents the number of the example within the Chapter.

Unless stated otherwise, Chapters 2 and 5 use the examples that are extracted from this study's dataset. When discussing the findings in Chapters 3 and 4, the data source is specified in parenthesis after the numbered example (e.g. (3.X) Example (BMJ-1)).

Chapter 1 Introduction

Clinical research represents the cornerstone of medical advances in modern society. According to the World Health Organization, the number of clinical trials conducted worldwide soared from only 2,672 in 2000 to 524,481 in 2019.[2] Within the medical discourse community, randomised controlled trials (RCTs) are described as "the gold standard for evaluating interventions because of their ability to minimise or avoid bias" (Moher et al., 2010, p. 1). This description reveals two important points regarding the standing of RCTs in medical research and practice. First, it foregrounds their role as an ideal vehicle for knowledge extension and practice improvement. Second, it highlights *objectivity* and *ethics* as the positive attitudinal values attached to the activity of conducting RCTs. Therefore, medical research articles reporting on RCTs (henceforth *RCT reports*) need to demonstrate that their research advances the medical community while reflecting the abovementioned communal values.

In the 1990s, trialists, methodologists, and the editors of top medical journals began expressing their growing concerns over the quality of RCT reporting, which led to the creation of *The Consolidated Standards of Reporting Trials Statement* (henceforth *the CONSORT Statement*) (Schulz, Altman, & Moher, 2010). The latest CONSORT 2010 Statement, which comprises 25 items that must be included in an RCT report, is accompanied by a paper explaining and elaborating on the provided guidelines (Moher et al., 2010). Although this paper provides a strong rationale behind each item from a medical standpoint, it does not offer any advice on how the required items can be communicated effectively through language.

Recently, RCT reports have also been the focus of a linguistic study on the use of hyperbolic and subjective language termed **hype** (Millar, Salager-Meyer, & Budgell, 2019). This research concluded that the RCT report writers' tendency to employ hype is an ethically ambiguous practice. It was hypothesised that hype is the result of the community's pressure to publish and the "somewhat conflicting advice" of the *CONSORT* guidelines, which require writers to demonstrate a trial's novelty and scientificity (i.e., "gold standard") while maintaining objectivity (p. 149). To further investigate the motivations behind using hype, the same authors conducted interviews with seven clinical researchers (Millar, Budgell, & Salager-Meyer, 2020). The results of this inquiry mainly confirmed the proposed hypothesis, attributing the phenomenon of hype to reasons such as "struggling for objectivity" or "established conventions" (pp. 60, 61). From a linguistic perspective, Millar et al. (2019, 2020) have identified an important obstacle that all RCT report writers face – balancing the need to

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convince with the need to inform objectively. Ironically, however, this project does not address the question of how the notions of persuasion and objectivity are construed and/or reconciled systemically through discourse. Instead, they focus on quantifying and rationalising the perceived instances of hype, relying on the analysts' judgements on "whether a particular linguistic item could be removed or replaced with an objective or neutral alternative" (Millar et al., 2019, p. 142).

This thesis shifts the focus from a normative discussion of how RCT authors *should* (or *should not*) write to a study of how trial justification and scientificity are construed through language. Drawing on a sample of "pre-Results" sections in recently published RCT reports (i.e., Introductions and Methods), the main goal of this thesis is to investigate a linguistic construction of a sound scientific base for medical knowledge extension. This qualitative inquiry is grounded in the theoretical framework of systemic functional linguistics (SFL) (e.g., Dreyfus, Humphrey, Mahboob, & Martin, 2015; Halliday & Martin, 1993; Halliday & Matthiessen, 2014; Hao, 2020a; Hood, 2010; Martin, 1992; Martin & Rose, 2007, 2008; Martin & Veel, 1998; Martin & White, 2005; Maton, Martin, & Doran, 2021; Nesi & Gardner, 2012; Rose & Martin, 2012; Szenes, 2017). While the theoretical principles underpinning this thesis will be discussed in Chapter 2, this chapter reviews the linguistic approaches to analysing research articles and then outlines the empirical and theoretical foci of this study. This is followed by an overview of the significance and organisation of the thesis.

1.1 Linguistic approaches to the research article genre

Since the 1970s, three lines of genre inquiry – the New Rhetoric , English for specific purposes (ESP) and systemic functional linguistics (SFL) – have been exploring the construction, negotiation, and dissemination of reliable knowledge (Hyon, 1996). This section reviews the ESP and SFL scholarship on the research article (RA) genre as ESP and SFL constitute linguistic approaches to genre (Flowerdew, 2002).

With the aim of providing writing assistance to (post)graduate students (e.g., Swales & Feak, 2012), the RA genre has been mainly explored within the ESP tradition. In ESP, **genre** is defined as a "communicative event" with a "shared set of communicative purposes" (Swales, 1990, 2004). The ESP literature on the RA genre has focused on lexicogrammatical features (e.g., Hyland, 1998; Millar et al., 2019; Salager-Meyer, 1994; Thomas & Hawes, 1994) and/or textual structure (e.g., Cotos, Huffman, & Link, 2017; Moreno & Swales, 2018; Nwogu, 1997; Ruiying & Allison, 2004; Swales, 1990, 2004).

Early ESP research on the RA genre was mainly concerned with the construal of authorial stance through:

- reporting verbs such as *demonstrate*, *state*, or *suggest* (Thomas & Hawes, 1994; Thompson & Ye, 1991);
- grammatical tense and/or voice (Heslot, 1982; Malcolm, 1987; Oster, 1981; Swales, 1981; Tarone, Dwyer, Gilette, & Icke, 1981); and
- attitudinal expressions such as hedges and boosters (Adams Smith, 1984; Hyland, 1996, 1998; Salager-Meyer, 1994).

The above studies are predominantly quantitative, focusing on the presence and/or frequencies of the words and grammatical realisations found to be characteristic of an RA section. Therefore, the findings often include lists of common words and structural realisations, sometimes divided into *a posteriori* categories (e.g., *shields* and *approximators* in Salager-Meyer's (1994) study on hedging in medical RAs). Although this scholarship has provided valuable insights into some of the established linguistic practices in RA writing, its overreliance on the frequencies of clause-level elements such as verbs is problematic given its aim is to explore discourse-level phenomena such as authorial stance.

Following Swales' (1990, 2004) seminal work on RA Introductions, the focus of the ESP research shifted towards the rhetorical structure of RA sections. Swales argues that the goal of introductory sections is to create a research space through three rhetorical moves: Establishing a territory, Establishing a niche, and Occupying the niche. His **Create-a-Research-Space** (**CARS**) **model** of RA Introductions has brought about the emergence of the **move analysis**. In this qualitative, text-based analysis, texts are segmented and annotated using the concept of a **move**, which is defined as "a discoursal or rhetorical unit that performs a coherent communicative function in a written or spoken discourse" (Swales, 2004, p. 228).

Swalesian move analysis has been used to explore individual RA sections, including Introductions (e.g., Lewin, Fine, & Young, 2001; Pho, 2010; Samraj, 2002; Swales, 1981), Methods (e.g., Bloor, 1999; Cotos, Huffman, & Link, 2015), Results (e.g., Brett, 1994; Lim, 2010), and Discussions (e.g., Basturkmen, 2012; Dubois, 1997; Hopkins & Dudley-Evans, 1988). Furthermore, move analysis has been employed in the analyses of entire RAs (e.g. multi-disciplinary RA study in Cotos et al., 2015; biochemistry RAs in Kanoksilapatham, 2005; medical RAs in Nwogu, 1997) or adjacent RA sections (e.g. moving from results to conclusions in Ruiying & Allison, 2003). Despite a large volume of research, however, the identified move structures of RA sections other than Introduction can vary in the number and nomenclature of identified units. Based on an extensive review of the conducted move analyses, Swales (2004, pp. 219–236) concludes that:

- RA Methods can be clipped or elaborated, depending on the presence of moves that evaluate or contextualise the research design;
- RA Results can include moves that evaluate and/or comment on the results;

- RA Discussion has proven to be the most challenging section for analysis, resulting in a wide range of proposed models that often involve a cyclical move structure.

In some cases, the differences between the proposed models may be the result of disciplinary conventions (e.g., medical vs. sociology RAs). Be that as it may, the discrepancies between the identified structures can also be attributed to the lack of a functional theoretical framework. According to Swales and Moreno (2018), the text length realising a move can range from a single clause to a set of paragraphs performing the same rhetorical function. Nevertheless, there are disagreements on what roles functional and formal criteria should perform in the identification of move boundaries. In many cases, move identification relies on pinpointing distinct groupings of lexical items and features such as tense or voice (e.g., Nwogu, 1997). On the other hand, some move analyses are guided by *ad hoc* probing questions. For instance, Pho (2010) uses the question '*What has not been done in the field?*' to identify the Establishing a Niche move in her dataset. Due to the absence of clearly defined analytical principles, questions have been raised regarding the reliability and validity of move analyses (e.g., Crookes, 1986; Kanoksilapatham, 2005). Although the reliability of a single study could be increased by involving multiple analysts (Biber, Connor, & Upton, 2007), there still remains the issue of extending genre knowledge upon a wide range of study-specific and sometimes contradictory criteria for move identification.

Based on the above review, a form-oriented approach to language appears to have hindered the existing ESP research in two ways. First, the need for *a posteriori* functional categories has prevented the investigation of form-function interrelations in a systematic manner. For example, in their highly influential research on the use of hedges, Salager-Meyer (1994) and Hyland (1996, 1998) devise and employ their own classificatory labels. This is likely to complicate the comparison of subsequent ESP studies unless they follow the same annotation scheme. Second, grammatical categories such as modality or tense/voice operate at the clause level, which makes an investigation of meanings at the discourse level extremely challenging. As an illustration, it may be rather difficult to investigate the interaction of evaluative resources because the use of evaluation in one clause may 'colour' the reading of the following stretch of text as either positive or negative. Therefore, a genre-based study of research articles should be grounded in a functional linguistic theory such as SFL, which can relate linguistic patterns to the enacted social practices.

Compared to the ESP tradition, the RA genre has only recently attracted attention in SFL research (Cheng & Unsworth, 2016; Hao, 2015; Hao & Humphrey, 2012; Hood, 2010; Hood & Martin, 2005; Humphrey & Hao, 2013; Nesi & Gardner, 2012). Nonetheless, Hood (2010) argues that an SFL approach to genre offers a more robust analytical framework since

it is grounded in a functional language theory that allows for "the relationship between meaning and language (…) [to be] theorised rather than intuited" (p. 31).

Following Hjelmslev's (1961) concepts of connotative and denotative semiotics, SFL models language as a stratified semiotic system realising social context (Halliday, 1978; Halliday & Hasan, 1985; Halliday & Matthiessen, 2014; Martin, 1992, 2013, 2014). In SFL, **genre** is defined as "a staged, goal-oriented, purposeful activity" in which language plays a crucial role (Martin, 1984, p. 25; Martin & Rose, 2008, p. 6). Generic patterns are realised through a configuration of three contextual variables: **field** (i.e., topic), **tenor** (i.e., participants), and **mode** (i.e., language role). In turn, contextual variables correspond to three strands of language meanings called **metafunctions**. According to Halliday (1978), field is expressed through **experiential** meanings, tenor is enacted through **interpersonal** meanings, and mode is organised by textual meanings. These meaning-making resources are organised into two language content strata: **discourse semantics** and **lexicogrammar** (following Martin, 1992). Lastly, language content is realised through phonology/graphology as the expression plane. The SFL conceptualisation of the natural and bi-directional relationship between social context and language is illustrated in Figure 1.1.
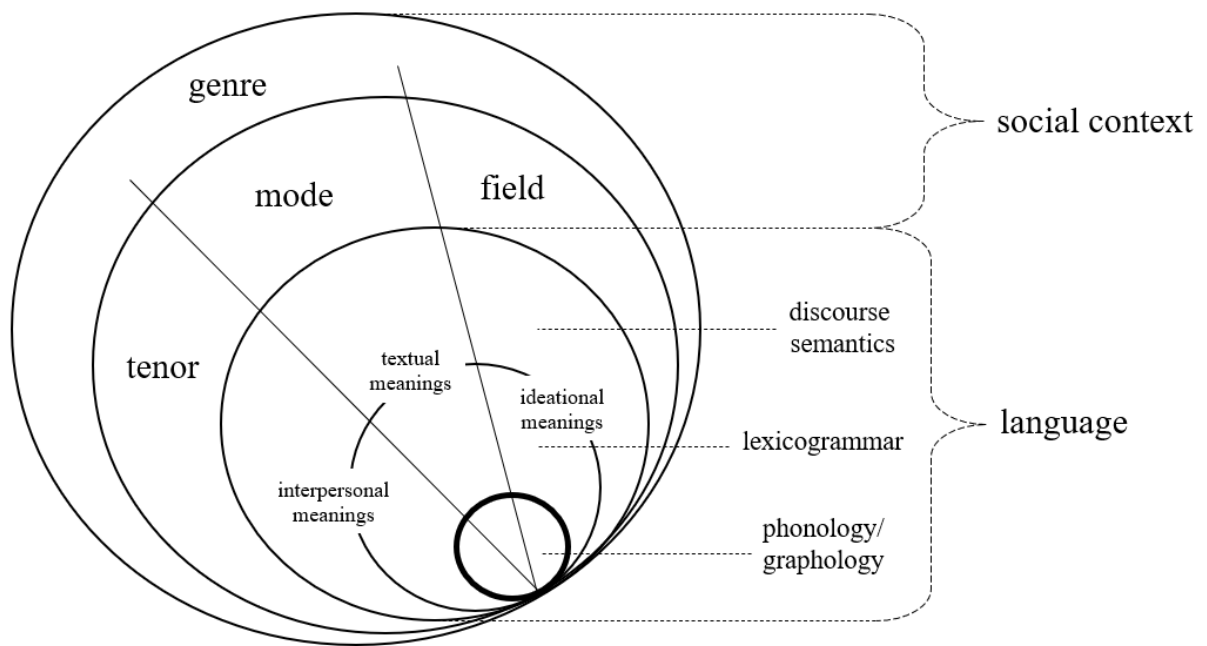
Figure 1.1: Stratification and metafunction in SFL (cf. Martin & White, 2005, p. 32).

Since its beginnings in the 1980s, SFL genre research has been primarily interested in deconstructing school genres (e.g., Christie & Dreyfus, 2007; Christie & Macken-Horarik, 2011; Christie & Martin, 1997; Coffin, 2006; Cope & Kalantzis, 1993; Eggins, Wignell, & Martin, 1993; Humphrey, 1996; Martin & Painter, 1986; Martin & Wodak, 2003; Rothery, 1994). This line of inquiry, known as **"Sydney School" genre pedagogy**, has contributed immensely to the development of genre-based literacy programs in pre-tertiary and, more recently, higher

education contexts (e.g. the SLATE project in Dreyfus et al., 2015; the Reading to Learn project in Rose & Martin, 2012). Within the "Sydney School" tradition, the RA genre is typically classified as a **procedural recount** comprising four stages: Introduction, Methods, Results, and Discussion (Martin & Rose, 2008). These stages are conceptualised as the main steps in the process of "producing science", which entails "adding to and modifying the knowledge base of the scientific field" (p. 207). As far as individual RA sections are concerned, the "Sydney School" approach has been mainly employed in the in-depth investigations of Introductions, focusing on the generic structure and/or the coupling of experiential and interpersonal meanings (e.g., Hao & Humphrey, 2012; Hood, 2010). In these studies, RA Introductions have been found to be construed by a **research warrant** macrogenre. Furthermore, a study on higher education genres has found RA Methods to be realised through **methodology recounts**, which can be 'clipped' or 'elaborated' (Nesi & Gardner, 2012, following Swales, 2004).

This thesis has adopted an SFL perspective to conduct a genre-based investigation of Introductions and Methods in recently published RCT reports. Specifically, it employs a multi-stratal (in particular, genre and discourse semantic) and multi-functional (experiential, interpersonal, and textual) text analysis. These theoretical principles are reviewed in detail in Chapter 2.

1.2 Foci of the study

1.2.1 An empirical focus: a linguistic construction of a sound scientific base in clinical psychology RCT reports

In this thesis, a sample of Introductions and Methods from clinical psychology RCT reports is used to explore the construal of a sound scientific base for medical knowledge extension through language. More precisely, this study offers an SFL-informed deconstruction of the "pre-Results" stages in reports that deal with the effectiveness of treatments for depressive and anxiety disorders. The decision to focus on the topics of depression and anxiety was motivated by that fact these psychological disorders remain some of the largest health problems worldwide. Several systematic reviews have indicated that mental and substance use disorders are the leading cause of the global burden of disease in terms of years lived with disability (YLDs) (e.g. Vigo, Thornicroft, & Atun, 2016; Whiteford et al., 2013). It has also been revealed that depressive and anxiety disorders represent the main culprits, accounting for 55.1% of total YLDs attributed to the above-mentioned health issues.

As already mentioned, RCT research is of particular importance for extending medical knowledge due to its status as "the gold standard" for treatment assessment (Moher et al., 2010). For a trial to be classified as an RCT, it needs to adhere to a strict set of RCT procedures (see Fig. 1.2).
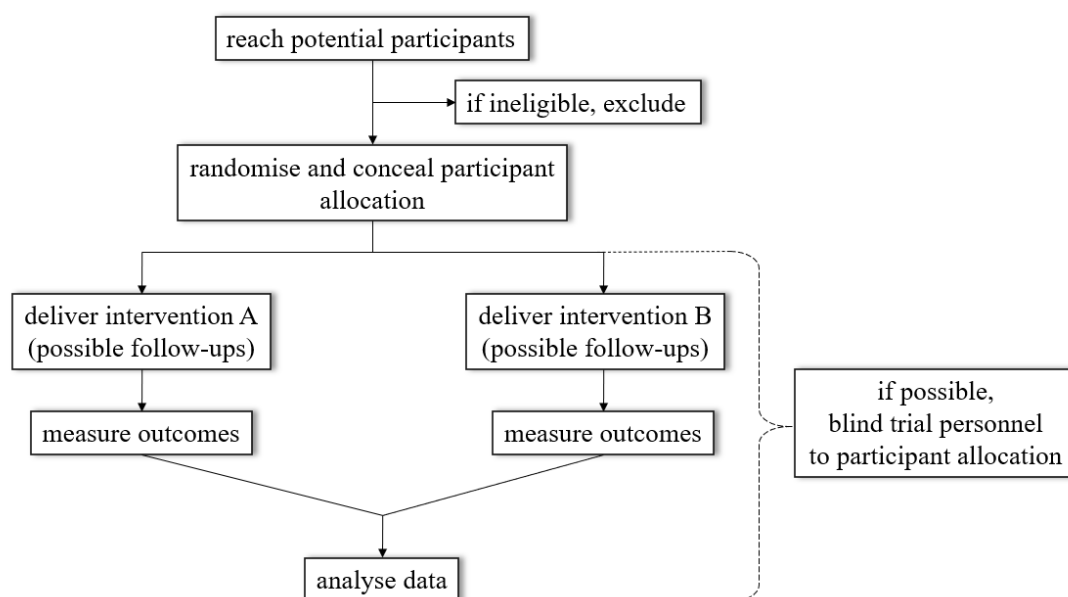
Figure 1.2: Workflow of an RCT involving two parallel interventions (cf. Moher et al., 2010, p. 2).

As illustrated in Figure 1.2, an RCT starts with **participant selection**, which involves reaching potential participants and establishing their eligibility. The enrolled participants must be allocated to their **interventions** on a truly random basis, which requires **randomisation and masking**. In RCT scholarship, masking subsumes the concepts of **allocation concealment** and **blinding** (Boutron, Moher, Altman, Schulz, & Ravaud, 2008; Moher et al., 2010). According to Moher et al., allocation concealment is a "critical mechanism that prevents foreknowledge of treatment assignment and thus shields those who enroll participants from being influenced by this knowledge" (2010, p. 10). Similarly, blinding refers to the process of masking treatment providers, participants, outcome assessors, and statisticians to treatment allocation after the interventions have commenced. Unlike allocation concealment, however, it is argued that blinding "may not always be appropriate or possible" (Moher et al., 2010, p. 12). The interventions, which may include some follow-ups, are succeeded by **outcome measurement** and **statistical analysis**.

Within the medical discourse community, the structure and content of written RCT reports are regulated by two sets of guidelines. Being a type of medical RA, they are expected to comply with the "Uniform Requirements" issued by the International Committee of Medical Journal Editors. [3] This document strongly recommends that medical RAs follow the Introduction-Methods-Results-Discussion (IMRD) structure. As stated at the very beginning of the thesis, RCT reports are also subject to the CONSORT 2010 Statement due to their significance for the major stakeholders in the healthcare system (Schulz et al., 2010). The purpose of the CONSORT Statement is to help editors, peer reviewers, and readers "critically

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[3] See www.icmje.org .

appraise and interpret [RCT] reports" (Moher et al., 2010, p. 2). In addition to prescribing the IMRD structure, the Statement provides a checklist of 25 items that must be incorporated into the report. This checklist includes one Introduction item (Item 2) and ten Methods items (Items 3-12). The Introduction item requires that RCT report writers justify the need for their trial and specify its goals. It is argued that trial justification is essential since "it is unethical to expose humans unnecessarily to the risks of research" (Moher et al., 2010, p. 4). Furthermore, the Methods items demand that RCT report writers include enough details to allow trial replication and demonstrate that all the performed procedures have meet the "gold standard" for evaluating treatments. As already explained, these procedures include: trial design (Item 3), participant selection (Item 4), randomisation and masking (Items 8-11) interventions (Item 5), outcome measurement (Item 6), and statistical analysis (Items 7, 12).

In line with the CONSORT 2010 Statement, the purpose of the "pre-Results" RCT stages is to build a sound scientific foundation by demonstrating that the performed trial is justified, ethical, scientifically rigorous, and credible. This thesis investigates how these goals are construed through language using a sample of recently published clinical psychology RCT reports. In other words, it explores how the strategic couplings of textual, ideational, and interpersonal language resources enable the RCT report writer to inform and convince the medical discourse community of their trial's value. The principles behind data selection and analysis are discussed in Chapter 2.

1.2.2 A theoretical focus: developing SFL genre theory and ideational discourse semantics

In empirical approaches to language such as SFL, text analysis represents "a very rigorous way of testing, and thus improving, existing [language] descriptions" (Halliday & Matthiessen, 2014, p. 54; cf. Matthiessen, 2007a, pp. 791–792). Through an in-depth deconstruction of Introductions and Methods from recently published clinical psychology RCT reports, this thesis is also concerned with the development of two lines of SFL research:

- genre descriptions of longer pieces of writing (cf. Martin, 1994, 1995, 1996; "the big texts" in Szenes, 2017);
- discourse semantic descriptions of ideational resources in scientific discourse (e.g., Halliday, 1998; Hao, 2015, 2020a, 2020b; Hao & Humphrey, 2019; Martin, 1993).

As mentioned in Section 1.1, SFL defines genre as a staged goal-oriented social process realised through language (Martin, 1984). Accordingly, each genre comprises a set of functional **stages** oriented towards accomplishing a given goal (Martin & Rose, 2008). In addition, genre represents a semiotic context stratum, which is realised through the registerial variables of field, tenor, and mode (following Martin, 1992, 1999). At the discourse semantic stratum, the notion

of **phase** has also been introduced as a useful tool for making the linguistic patterns more visible in genre-based literacy programs (e.g., Dreyfus et al., 2015; Humphrey & Dreyfus, 2012; Rose, 2006; Rose & Martin, 2012). In "Sydney School" research, however, the existing descriptions of genre-stage-phase relations have been somewhat inconsistent. At the genre stratum, genres and stages have been referred to as units and functional categories, respectively (Martin & Rose, 2008; Rose & Martin, 2012). By contrast, Rose (2006) models genre, stage, and phase as units of analysis positioned along a discourse semantic rank scale. Therefore, genres and stages have been modelled differently and at different semiotic strata. Arguably, this issue has been exacerbated with the emergence of "Sydney School" research into higher education genres, which are characterised by longer pieces of writing. At the genre level, it has been postulated that texts can "grow bigger than a page" through genre complexing or embedding (Martin, 1994, 1995, 1996; Szenes, 2017). In the case of embedding, a genre functions as a stage of another genre. Nevertheless, it remains unclear which generic unit becomes supplanted by the embedded genre or what the relation between an embedded genre and a phase is. Therefore, this thesis aims to disentangle the genre-stage-phase relations to support future genre studies on longer pieces of writing.

When it comes to the language of science, the concepts of 'technicality', 'abstraction' and 'grammatical metaphor' have attracted a considerable amount of attention within the SFL community (e.g., Halliday & Martin, 1993; Hao, 2015, 2020a, 2020b; Hao & Humphrey, 2019; Martin & Veel, 1998; Maton et al., 2021; Unsworth, 2001). Despite a large number of studies, however, Hao argues that the relationships among these concepts are "far from clear" (2020a, p. 7). To clarify the field-discourse-lexicogrammar relations, Hao (2020a, 2020b) calls for a tri-stratal approach to identifying and describing ideational resources in disciplinary discourses. Building on recent developments in field (Doran & Martin, 2021; Hood, 2010), Hao's (2020a) description of ideational resources in biology discourse, and experiential lexicogrammar (Halliday & Matthiessen, 2014), this thesis proposes a model of ideational resources in the field of clinical psychology.

The process of testing and improving the existing SFL descriptions often requires "shunting" along the cline of **instantiation** (Halliday, 1996; cf. "abductive" methodology in Matthiessen, 2007a, 2013). In other words, the meaning patterns identified in authentic text instances (i.e., empirical data) are matched against the existing language systems, which represent a meaning potential. Then, revised generalisations about language features can be further tested and developed by analysing more text instances. To facilitate interpretation of the empirical findings of this thesis, existing descriptions of genre-stage-phase relations and ideational discourse semantics are critically reviewed and, where necessary, revised in Chapter 2.

1.3 Significance of the thesis

Through a genre-based investigation of RCT report Introductions and Methods, this thesis provides an SFL-informed perspective on the construal of a sound scientific foundation for medical knowledge extension. As a result, this research makes several significant contributions.

To begin with, this study offers a more sophisticated understanding of how trial justification and scientificity are construed through language by describing

- the generic staging of clinical psychology research warrants and methodology recounts; and
- the interactions among key ideational, interpersonal, and textual language resources.

Furthermore, this research makes substantial theoretical contributions to the existing SFL models of genre and ideational discourse semantics. Specifically, it contributes to

- the explanation and clarification of the relations between generic and discourse semantic units of analysis in a genre-based investigation (cf. Martin & Rose, 2008; Rose, 2006; Rose & Martin, 2012);
- the modelling of genre embedding as a means of extending the meaning potential of academic genres such as RAs (cf. Martin, 1994, 1995, 1996; Szenes, 2017); and
- the tri-stratal model of entities, figures, and sequences in experimental research discourses (cf. Hao, 2015, 2020a, 2020b; Hao & Humphrey, 2019).

Ultimately, the findings of this study have the potential to make an important linguistic contribution to the existing efforts of the medical discourse community to improve the quality of RCT reporting. As demonstrated in the recent SLATE project (Dreyfus et al., 2015), the "Sydney School" approach to genre can be used to scaffold literacy in higher education environments using the **Teaching-Learning-Cycle** (**TLC**) (e.g., Rothery, 1994; Rothery & Stenglin, 1994). The TLC comprises three stages: **Deconstruction**, **Joint construction**, and **Independent construction**. This thesis carries pedagogical implications for the Deconstruction stage, which is concerned with unpacking the meaning-making resources of model texts through explorations of generic stages and key linguistic features. The contributions of this thesis and the pedagogical implications of the findings will be revisited in the concluding chapter.

1.4 Organisation of the thesis

This thesis is organised into five chapters. This chapter (Chapter 1) has identified growing concerns about the quality of RCT reporting and introduced the foci as well as the significance of this genre-based study on Introductions and Methods in clinical psychology RCT reports. Furthermore, the two linguistic approaches to genre – namely, ESP and SFL – have been

critically reviewed to explain the rationale behind choosing SFL as the informing theory. Chapter 2 reviews the theoretical principles underpinning this research, including the theoretical contributions of this thesis. The following two chapters present the results of the genre-based investigations of Introductions (Chapter 3) and Methods (Chapter 4). Finally, Chapter 5 summarises the major contributions and pedagogical implications of the study before offering suggestions for further research.

Chapter 2 Theoretical foundations

This chapter presents the theoretical foundations underpinning the investigation of Introduction and Method sections in clinical psychology RCT reports. Section 2.1 outlines the architecture of systemic functional linguistics (SFL) as a functional language theory. Section 2.2 provides a critical overview of the SFL genre theory, while Section 2.3 reviews an SFL approach to discourse semantics. The breadth and depth of theoretical discussions included in this chapter are prescribed by the scope of this thesis, which is presented in more detail in Section 2.4.

2.1 A systemic functional theory of language

In systemic functional linguistics (SFL), language is perceived as a social semiotic system (Halliday, 1978; Halliday & Hasan, 1985; Halliday & Matthiessen, 2014; Martin, 1992). Put simply, SFL explores how linguistic meanings are construed in social contexts. According to Halliday (2013, p. 18), meaning is choice and "the semiotic activity of choosing what to mean can be represented as selecting a path through various networks of systems." It is important to note that language is not the only system used for social semiosis. Other examples include designed and/or non-verbal semiotic systems such as mathematics, gesture, architectural space, music, or images (see, e.g., Doran, 2017; Dreyfus, Hood, & Stenglin, 2011; Kress & van Leeuwen, 1996). This thesis, however, focuses on a linguistic construction of a sound scientific base for medical knowledge extension. It is argued that the success of an RCT report correlates with the writer's ability to select the language resources that are in line with the conventions and values of the medical discourse community.

To build a robust "architecture" of language in context, SFL theory relies on a number of interlocking semiotic dimensions (Halliday, 2003; Halliday & Matthiessen, 2014; Matthiessen, 2007b). The following sub-sections discuss the dimensions that are of importance for this study: **stratification**, **metafunction**, **axis**, **rank, instantiation,** and **semogenesis**.

2.1.1 Stratification

In SFL, **stratification** constitutes a key semiotic dimension for exploring the hierarchical organisation of language in context (Halliday, 1978; Halliday & Hasan, 1985; Halliday & Matthiessen, 2014; Hasan, 2013; Martin & Rose, 2008). To theorise the link between social context and language, SFL builds on Hjelmslev's concepts of connotative/denotative semiotics and content/expression planes. Following Saussure's (1916 /1966) notion of **sign** as a signifié-signifiant bond, Hjelmslev (1961) uses the term **connotative semiotics** to define systems that have another semiotic system as their expression plane. Accordingly, SFL argues that social context represents a connotative semiotic that is expressed through language. This signifying

relation, which is considered natural, bi-directional, and inextricable, can be visualised by using co-tangential circles (see Fig. 2.1).
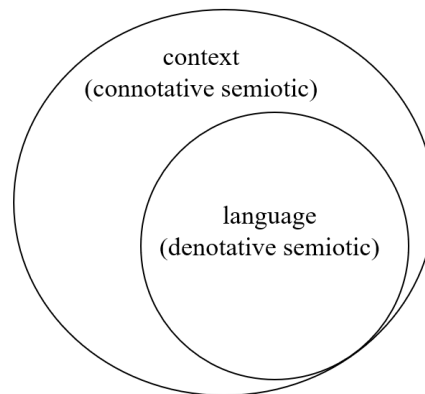
Figure 2.1: Stratification: language in context (cf. Martin, 2014, pp. 10, 11).

Furthermore, Hjelmslev postulates that **denotative semiotic systems** (e.g., language) have their own content and expression planes, which provides the basis for SFL's stratified language model (Halliday, 1978; Halliday & Hasan, 1985; Halliday & Matthiessen, 2014; Martin, 1992, 2013, 2014). In SFL, language **strata** represent different levels of abstraction at which language can be explored (see Fig. 2.2).
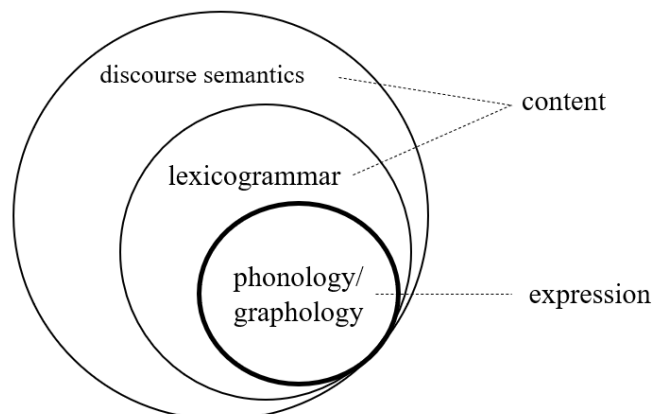
Figure 2.2: Triple articulation: SFL's stratified model of language (cf. Martin, 2013, p. 7).

As illustrated in Figure 2.2, **phonology/graphology** constitutes the **language expression plane**, being the lowest stratum that interacts with the physical features of speech/writing. Its relation to the content plane is observed as arbitrary because meaning construal depends on the phonological/graphological conventions adopted by language users. In writing, for instance, the meaning of the activity *sing* is realised differently depending on the graphological system being used – *sing* in English, *певати* in Serbian, or *chanter* in French. Within the **language content plane**, further distinction can be made between the levels of **lexicogrammar** (following Halliday & Matthiessen, 2014) and **discourse semantics** (following Martin, 1992; Martin &

Rose, 2007).[4] While lexicogrammar deals with meaning-making systems at the clause level, discourse semantics focuses on meaning construal beyond the clause. As is the case with context and language, the relation between these strata is natural, with discourse semantic meanings being realised at the lexicogrammatical level. To explore a linguistic construction of trial justification and scientificity in clinical psychology RCT reports, this study is primarily concerned with the meaning-making resources operating at the level of discourse semantics (for a detailed discussion on discourse semantic systems, see Section 2.3).

Endorsing Malinowski (1923) and Firth's (1950, 1964) views on language in context, Halliday (1978, p. 34) proposes that "the adult linguistic system is a culturally specific and situationally sensitive range of meaning potential." In other words, language comes into being as an unfolding **text** that construes meanings within a social environment.[5] When it comes to **context of situation**, it is stated that any situation type, or **register**, can be described with reference to three variables: **field** (what is going on), **tenor** (who is taking part), and **mode** (what is the role of language and other semiotic systems) (Halliday & Matthiessen, 2014). Furthermore, any context of situation is positioned as nested within a broader **context of culture** to which language users belong (Halliday, 1978; Halliday & Hasan, 1985).

Following Halliday's modelling of register, some SFL researchers have suggested that a taxonomy of text types (i.e., genres) should primarily focus on the variance in the field variable (Hasan, 1985; Matthiessen, 2006, 2014; Matthiessen & Pun, 2017). Martin and Rose (2007, 2008; 2012), however, warn against embedding the social purpose of a text into any individual register variable. Instead, they argue that genres should be investigated as configurations of register variables since text types (e.g., reports or explanations) "could be about almost any field, they could be spoken or written [mode], and their producers and audience could be close or distant, equal or unequal" (2008, p. 16). This reasoning is grounded in Martin's (1992, 1999) remodelling of context, which replaces Hallidayan notions of "situation" and "culture" with the social semiotic strata of **register** and **genre**. In this model, genre is defined as a system of "recurrent configurations of meaning [that] enact the social practices of a given culture" (Martin & Rose, 2008, p. 6). At the lower level of **register**, these configurations of meanings are expressed by a particular pattern of **field** (social activity), **tenor** (social relationships), and **mode** (the role of language). Therefore, register, which has language as its expression plane, acts as an intermediary stratum that links linguistic choices to the enactments of social processes within a culture (see Fig. 2.3).

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[4] For Halliday's modelling of the language content plane, which comprises lexicogrammar and semantics, see (Halliday & Matthiessen, 2014).

[5] In SFL, **text** is a technical term and refers to both written and spoken language instantiations (Halliday & Matthiessen, 2014).
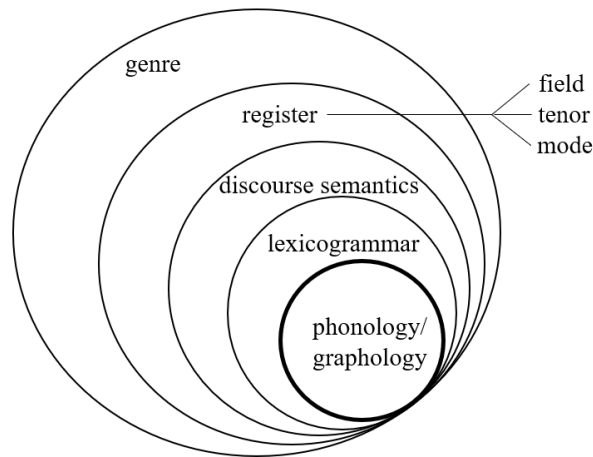
Figure 2.3: Martin's model of language in social context (cf. Martin, 1992, 1999, 2014; Martin & Rose, 2007, 2008).

This thesis has adopted Martin's approach to genre to explore the generic features of RCT report Introduction and Method sections for two reasons. First, this model enables the analyst to observe a linguistic construction of social practices from three complementary perspectives: field, tenor, and mode (see Fig. 2.3). In Martin's (1991) words, an exploration of genre as a stratum above register allows for a "more wholistic interpretation of a text type" (p. 131). Second, this approach to genre has been successfully applied in educational contexts (e.g. Dreyfus et al., 2015; Rose & Martin, 2012), which is in line with the pedagogical motivations of this research (for a detailed review of SFL approaches to genre, see Section 2.2).

Throughout this section, there have been a number of references to the construal and realisation of meaning patterns. This reflects SFL's idea that the hierarchical organisation of context and language strata is guided by the concept of **inter-stratal realisation**:

> Realization is a kind of re-coding like the mapping of hardware through software to the images and words we see on the screen of our computers. Another way of thinking about this is symbolization… Symbolizing is an important aspect of realization, since grammar both symbolizes and encodes discourse, just as discourse both symbolizes and encodes social activity (Martin & Rose, 2007, pp. 4, 6).

When it comes to inter-stratal relations, it needs to be emphasised that realisation does not mean constituency. For instance, register does not consist of discourse semantic patterns and discourse semantics does not comprise lexicogrammatical patterns; rather, register patterns are realised through discourse semantic patterns, which in turn are realised through lexicogrammatical patterns. [6] Following Lemke (1984), this phenomenon of higher-level patterns being realised by lower-level patterns is referred to as **metaredundancy**. Due to metaredundancy, meaning patterns identified at one level (e.g., discourse semantics) can be "re-coded" and observed as patterns at another level (e.g., lexicogrammar or register). In fact, Halliday (1978) argues that all language phenomena should be investigated "from above",

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[6] In Hasan's terms, "the higher stratum *activates* the lower and the lower *construes* the higher [emphasis added]" (2013, p. 279).

"from roundabout" and "from below". Such multi-stratal approach to exploring meaning construal is referred to as **a trinocular perspective** (Halliday & Matthiessen, 2014).

As far as the nature of inter-stratal meaning relationships is concerned, a distinction can be made between **literal** and **symbolic** realisations (Martin, 2020). In SFL literature, symbolic realisations have been extensively researched as instances of **inter-stratal tension**, including **grammatical metaphor** (e.g., Halliday & Martin, 1993; Martin & Veel, 1998) and, more recently, **meaning reconstrual** (e.g., Hao, 2020b; Hao & Humphrey, 2019). Grammatical metaphor (or **meaning remapping** in Hao, 2020a) refers to tension between discourse semantic and lexicogrammatical realisations, while meaning reconstrual has been explored as tension between field and ideational discourse semantics. Due to their importance for the analysis of scientific discourse, the concepts of ideational metaphor and meaning reconstrual are discussed in more detail in Section 2.3.1.1.

2.1.2 Metafunction

Being a social semiotic, language consists of meaning-making systems that are oriented towards fulfilling three social functions: **ideational**, **interpersonal**, and **textual** (Halliday, 1978; Halliday & Hasan, 1985; Halliday & Matthiessen, 2014; Martin, 1991, 1992). In SFL, these three strands of meaning are referred to as **metafunctions**. Ideational meanings construe the "reality" of our experience, both "external" (being, doing, happening, saying) and "internal" (thinking and feeling). Among ideational meanings, a further distinction can be made between two sub-types: **experiential** (how is experience construed) and **logical** (how are different segments of experience interconnected). Furthermore, interpersonal meanings construe "social reality" by enacting social relationships among people. Finally, textual meanings construe "semiotic reality" by organising ideational and interpersonal meanings into a discourse.

In context, linguistic systemic choices perform all three metafunctions simultaneously. In terms of realisation patterns, the metafunctional organisation of language correlates with the contextual organisation of register variables (Halliday, 1978; Martin, 1991). More precisely, field is realised by ideational meanings, tenor by interpersonal meanings, and textual meanings reflect mode. It is these relations that enable the analyst to explore and interpret the symbolising relationship between language choices and social practices. As shown in Figure 2.4, this can be visualised by mapping the metafunctional grouping of language meanings onto the stratified model of language in context.
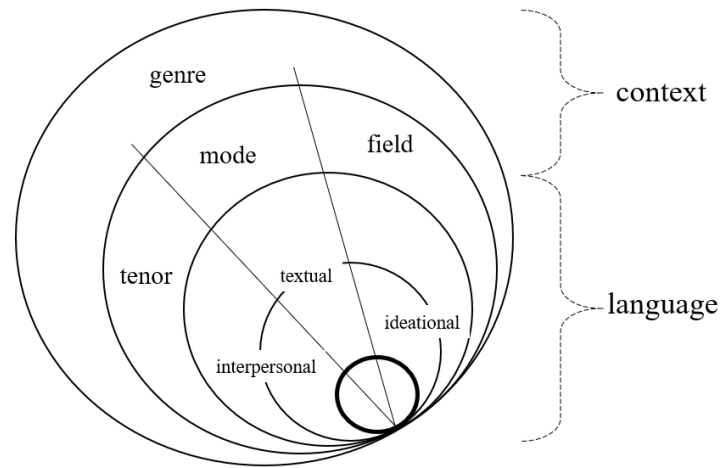
Figure 2.4: Metafunctional organisation of language in context (adapted from Martin & White, 2005, p. 32).

In SFL, metafunctions are also associated with different modes of expression. Drawing on Pike's (1959) view on language resources as **particle**, **field**, and **wave**, Halliday (1979) establishes a link between:

- ideational meanings and **particulate** structures, based on experiential **constituency** (⌐⌐) and logical **interdependency** (⌒↘);
- interpersonal meanings and **prosodic** (⬭) structures; and
- textual meanings and **culminative-periodic** (〰) structures.

In addition, Halliday (1981) distinguishes between **multivariate** and **univariate** structures. Multivariate structures are defined as configurations of elements that perform distinct functions within a larger closed structure (A + B + C = D). In other words, these structures form part-whole relations, which can be represented in terms of constituency. On the contrary, univariate structures are open-ended and involve an iteration of the same functional relation (e.g., paratactic extension: 1+2+3+…). In this case, the elements form interdependent part-part structures, which can be visualised using chains of dependence. In (*Halliday's*) *Introduction to Functional Grammar* (Halliday, 1985, 1994; Halliday & Matthiessen, 2004, 2014), multivariate constituent structures have been used as notations for the particulate, prosodic, and periodic expression modes attached to experiential, interpersonal, and textual metafunctions. To illustrate, Figure 2.5 provides a metafunctionally organised analysis of a clause extracted from this study's dataset.

Metafunction	*Before the trial,*	*the patients*	*were not*	*using*	*any antidepressants*	Mode of expression
experiential	Circumstance: time	Actor	Process		Goal	particulate (part-whole)
interpersonal	Residue (Adjunct)	Mood		Residue		prosodic
textual	Theme		Rheme			periodic

Figure 2.5: Halliday's multivariate renderings of particulate, prosodic, and periodic modes of expression at the clause level (see also Martin, 1996, p. 42).

As shown in Figure 2.5, a multivariate rendering of meaning construal generalises across the three modes by using constituent structures (particulate – Circumstance^Actor^Process^Goal; prosodic – Residue^Mood^Residue; periodic – Theme^Rheme).[7] On the other hand, univariate interdependency chains have been employed to represent the iterative nature of logical relations. For example, the clause represented in Fig. 2.5 enters a chain that involves paratactic extension between clauses (i.e., 1+2). Following Halliday and Matthiessen (2014, p. 472), Figure 2.6 gives an illustration of this chain.
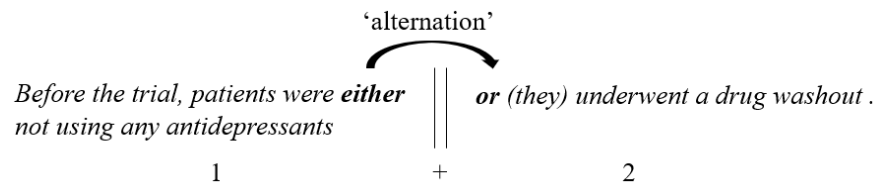
Figure 2.6: Logical meaning as interdependency: a case of paratactic extension (alternation).

Unlike the bounded structures presented in Figure 2.5, it should be noted that the 'alternation' chain in Figure 2.6 is open-ended and could be extended by adding an infinite number of alternatives (*either…or… or…or…*).

Halliday's (1981) use of constituency as a means for representing prosodic and periodic structures has drawn criticism from Matthiessen (1988) and Martin (1996). They argue that interpersonal prosodies (e.g., polarity) transcend the boundaries of constituent elements, which makes them suprasegmental. In the clause represented in Figure 2.5, for example, negative polarity, which is selected through Finite in the Mood element (*were not*), spreads to the indefinite deixis (*any*) in the Residue. As a solution, Martin (1996) proposes an alternative representation that builds upon Halliday's (1979) concept of "field-like" (⊂⊃) prosodic structures (see Fig. 2.7).
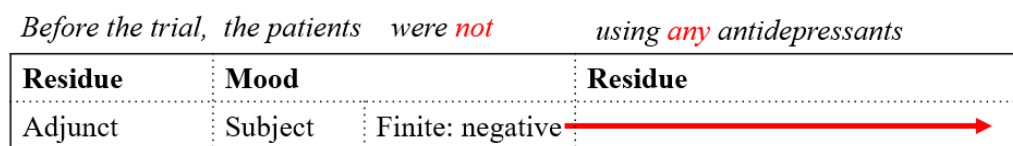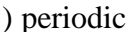
Figure 2.7: Interpersonal meaning realised as prosody: a case of polarity (cf. Martin, 1996, p. 43).

Similarly, it is argued that a constituent structure does not reflect the "peaks of prominence" associated with textual meanings (i.e., pulses in Matthiessen, 1988). To visualise the functions of Theme (text's "angle on its subject matter") and Rheme ("newsworthy information"), Martin (1996) extends Halliday's (1979) notion of "wave-like" (〰〰) periodic structures (see Fig. 2.8).

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[7] According to Halliday and Matthiessen (2014, p. 156), experiential Circumstances belong to Residue. If they occupy the initial clausal element, the Residue becomes discontinuous (e.g., *Before the trial…using any antidepressants.*)
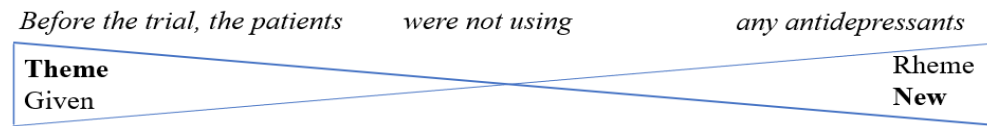
Figure 2.8: Clause-rank textual meaning as pulses of prominence (cf. Martin, 1996, p. 49).

While Matthiessen (1988) believes constituency to be an appropriate representational model for particulate structures expressing experiential meanings, Martin (1996, p. 39) argues against such notations because they cannot indicate nuclear relations. To understand the significance of nuclearity in the construal of experience, it is now useful to provide a brief overview of Halliday's alternative models for visualising (1979) and analysing (1985) experiential grammar, which involve the concept of nuclearity. In 1979, Halliday proposed that part-whole structures can also be illustrated using a non-linear model with the elements clustering around a **nucleus** that contains Process and Goal (see Fig. 2.9).
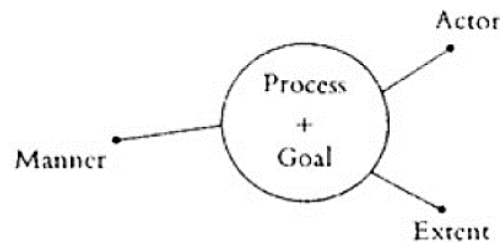
Figure 2.9: Linear and non-linear representation of experiential grammar (taken from Halliday, 1979, p. 203).

In 1985, he also suggested an ergative Agent-Process-Medium-Circumstance analysis for the clauses such as *Before the trial, the patients were not using any antidepressants* (see Fig. 2.10).
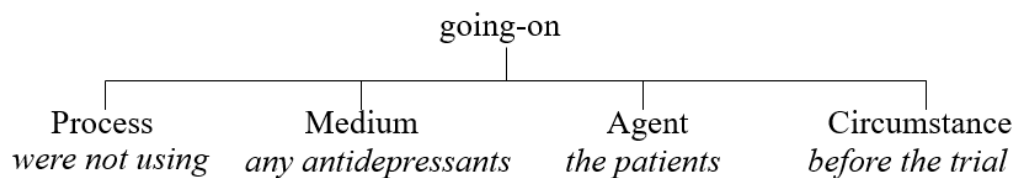
Figure 2.10: Clause rank experiential meaning as a part-whole configuration: an ergative model (cf. Martin, 1996, p. 44).

In the ergative model, the functions differ in terms of their importance for the construal of experience. For example, only Process and Medium are essential for realising the experiential "going-on" showcased in Figure 2.10, which makes them **nuclear**. On the contrary, Agent (*the patients*) denotes a cause that is external to the nucleus, which means its realisation is optional rather than required (e.g., possible Agent omission in *No antidepressants were used (by the patients).*). Finally, Circumstance (*before the trial*) is perceived as the most peripheral because it cannot be implied without being explicitly realised. According to Martin (1996), constituent representations of ergativity (e.g., Fig. 2.10) are not powerful enough to reflect nuclearity.

Consequently, Martin extends Halliday's non-linear representation (see Fig. 2.9) by proposing an **orbital** ergativity model for representing experiential meanings (see Fig. 2.11).
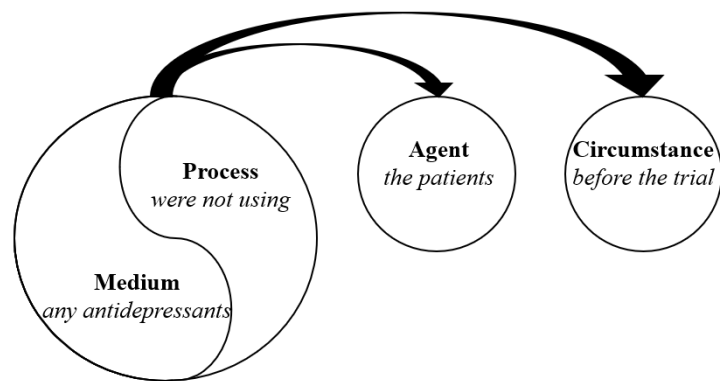
Figure 2.11: Clause rank experiential meaning as orbit: a nucleus with satellites (cf. Martin, 1996, p. 45).

Following Martin (1996), Figure 2.11 presents an orbital modelling of the experiential meanings construed in the clause that has been the focus of this section. In this case, Process and Medium represent **nucleus** of the clause, while Agent and Circumstance are observed as **an inner satellite** and **outer orbit**, respectively.

When it comes to logical meanings, Martin (1996, p. 47) also challenges Halliday's (1979) view of interdependency as a particulate structure since "the term *part* [emphasis in original] is a misnomer in any case for a structure not implying a whole." Instead, he proposes that logical relations be associated with the concept of **serial** (i.e., multi-nuclear) structures (see Fig. 2.12).
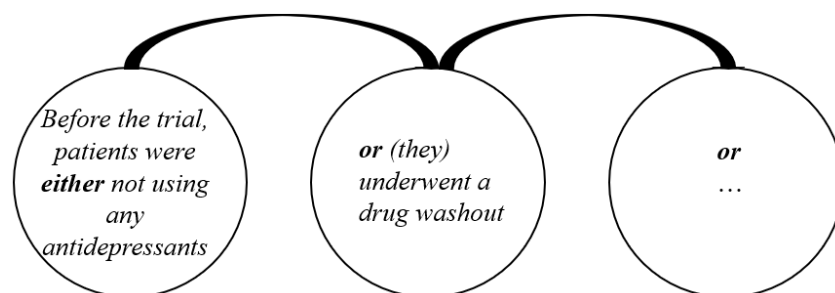
Figure 2.12: Logical meaning as a series: a case of a paratactic clause complexing (cf. Martin, 1996, p. 56).

As illustrated in Figure 2.12, the clause complex analysed in this section introduces the alternatives one after another, making each clause a separate **nucleus**.

At the level of discourse semantics, Martin's (1996) revised model of nuclear, prosodic, and periodic modes of expression has proven to be an effective analytical tool for investigating the construal of ideational, interpersonal, and textual meanings within a given context (e.g., Hao, 2020a; Hood, 2010; Martin, 2008; Martin & Rose, 2007; Martin & White, 2005; Szenes, 2017). This will be further elaborated in Section 2.3. At the level of genre, Halliday's (1981) concepts of multivariate and univariate structures have been used to interpret generic structure

(Martin, 1994, 1995; Szenes, 2017). As this line of research is highly relevant to a discussion on the methodological issues surrounding the analysis of longer pieces of writing, it will be reviewed in detail in Section 2.2.4.

2.1.3 Axis: system and structure

While the previous sub-section elaborated on the *functional* aspect of systemic functional linguistics, this sub-section is concerned with a *systemic* view on language. In SFL, a distinction is made between **system** and **structure** (Halliday, 1985, 1994; Halliday & Matthiessen, 2004, 2014, following Firth, 1964; Hjelmslev, 1961; Saussure, 1996). System refers to **paradigmatic** relations, which exist between oppositional meanings in a system. On the other hand, structure refers to **syntagmatic** relations, which deal with the unfolding of meanings in a text. The complementarity between system and structure, which underlies the SFL organisations of strata and metafunctions, is labelled **axis** (Martin, 2013; Matthiessen & Halliday, 2009).

The relationship between paradigmatic and syntagmatic relations is one of **intra-stratal** realisation.[8] As shown in Figure 2.13, systemic features are realised through syntagmatic structures, whose configurations are labelled in terms of **functions** and **classes** (traditional **parts of speech**).
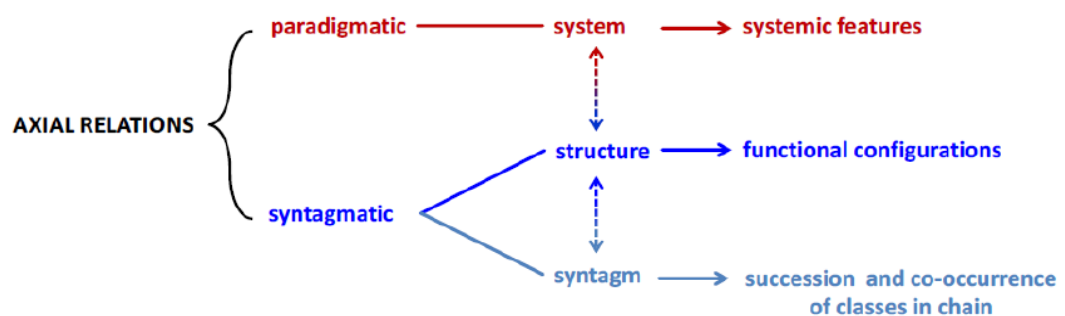
Figure 2.13: Paradigmatic and syntagmatic axes (taken from Quiroz, 2013, p. 55).

In SFL tradition, functional labels "provide an interpretation of grammatical structure in terms of the overall meaning potential of the language" (Halliday & Matthiessen, 2014, p. 76). The example presented below shows the experiential structure analysis of the clause introduced in the previous sub-section.

	before the trial	*the patients*	*were not using*	*any antidepressants*
Function (experiential)	Circumstance	Actor	Process	Goal
class	prepositional phrase	nominal group	verbal group	nominal group

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[8] **Intra-stratal** relations, which are formed within the same strata, should not be confused with the **inter-stratal** relations formed between different strata (see Section 2.1.1).

Experientially, the functional configuration of this clause involves four functions: Circumstance, Actor, Process, and Goal. By convention, SFL uses capitalisation (e.g., Actor) to indicate a functional label. These functions are realised by classes of groups/phrases as lower-rank units: prepositional phrase and nominal/verbal groups. It is important to note that the relation between function and class is not one-to-one (Martin, 2013; Matthiessen & Halliday, 2009). That is, many functions can be realised by different classes and the same class can perform more than one function. For example, the prepositional phrase *before the trial*, which functions as Circumstance, could be replaced with a nominal group such as *last week*.

Unlike formal grammars (e.g., Chomsky, 1957, 1965), a systemic-functional approach to grammar foregrounds paradigmatic relationships as "the primary driving force in language use" (Fontaine, 2013, p. 5). In other words, it is argued that language is a meaning-making potential rather than a set of rules. It is **system networks** that provide language users with options that construe different meanings in context. In essence, meaning is choice (Halliday, 1978, 2013). To illustrate the architecture of SFL system networks and outline the conventions used (following Halliday & Matthiessen, 2014; Martin, 2013), Figure 2.14 shows the English interpersonal system of MOOD, which is located at the level of lexicogrammar.
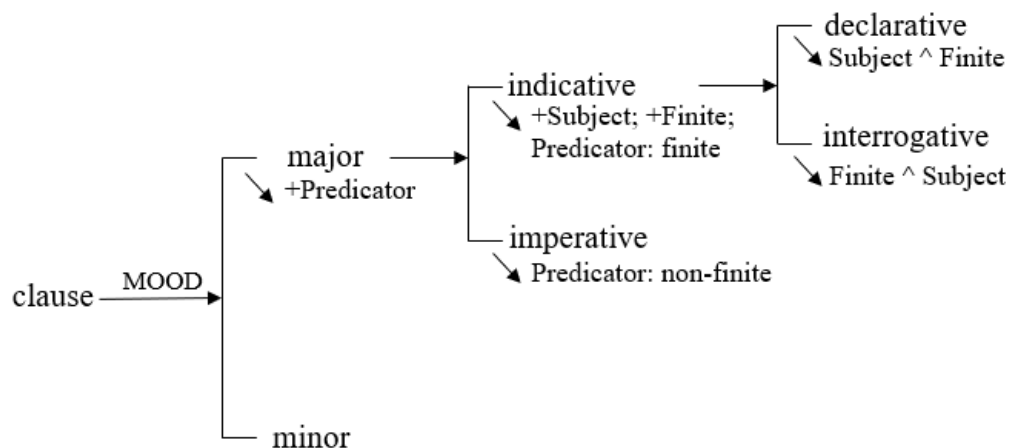
Figure 2.14: A basic system network of MOOD (adapted from Martin, 2013, p. 43).

In SFL, system networks are read from left to right. As illustrated in Figure 2.14, clause represents **the entry condition** for the English MOOD system. The right-facing square bracket ([) indicates that the language user must select one, and only one, **feature** (i.e., systemic option): 'major' or 'minor'. Conventionally, system names are written in small caps (e.g., MOOD), while lower case font is used for features. Following Halliday and Matthiessen (2014), this thesis uses single quotes for in-text references to systemic features (e.g., 'major'). A system feature can be the entry condition for another system comprising more **delicate** features. In the MOOD system, for instance, a selection of the 'major' feature is followed by a choice between 'indicative' and 'imperative'. Furthermore, if 'indicative' is selected, an additional choice is made between 'declarative' and 'interrogative'.

A diagonal downward arrow under a feature (↘) introduces the feature's realisation statements, linking the oppositional meanings to their structural realisations. These realisation statements can specify a number of functions and their relations: the plus (+) sign requires that a given function be inserted, while the carat (^) indicates a sequence of functions. For example, selecting the 'indicative' feature requires that both Subject and Finite be inserted (↘ +*Subject; +Finite*). Then, the ordering of these functions can construe two opposing meanings: 'declarative' (Subject followed by Finite; ↘ *Subject ^ Finite*) or 'interrogative' (Finite followed by Subject; ↘ *Finite ^ Subject*). In some cases, the opposition between features is reflected in how a particular function is realised, with the 'indicative/imperative' distinction being a good case in point. The 'indicative' feature contains Predicator realised by a finite verbal group, whereas the 'imperative' uses a non-finite verbal group to construe the Predicator function. As shown in Figure 2.14, a function-class relation is represented using the colon (:) mark ('imperative' ↘ *Predicator: non-finite*).

In the MOOD system network presented in Figure 2.14, all the opposing features are linked in terms of logical alternation (e.g., 'major' OR 'minor'). However, it is also possible for SFL networks to comprise **simultaneous** systems (i.e., systems linked in terms of logical addition). At the level of lexicogrammar, for instance, the meaning potential of a clause in English is formalised using three simultaneous systems: TRANSITIVITY (experiential), MOOD (interpersonal), and THEME (textual). As shown in Figure 2.15, the logical relation of addition is represented by a right facing brace ({).
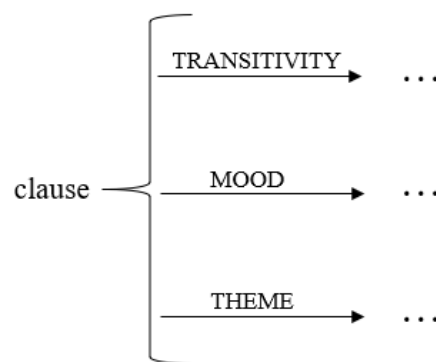
Figure 2.15: Clause rank lexicogrammatical systems (cf. function-rank matrix in Halliday & Matthiessen, 2014).

Within SFL tradition, a categorical organisation of systemic features (i.e., **typology**) can be complemented by a **topological** perspective, which represents "systems as clines, with degrees of difference between features" (Martin, 2013, p. 29). A topological analysis of English vowels with reference to their relative height and frontedness is a representative example of such perspective (see Fig. 2.16).
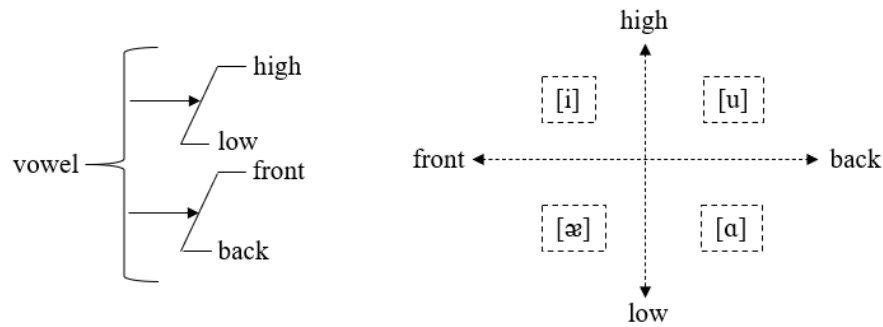
Figure 2.16: A topological perspective on vowels in English (adapted from Martin, 2013, p. 30).

According to Martin (2013), SFL does not have a standardised notation for representing topologies. As illustrated in Figure 2.16, he proposes the use of a slanted square bracket (/) to signal a cline (from 'high' to 'low'; from 'front' to back'). In addition, a system network comprising two simultaneous clined systems can be converted into a diagram using the two clines as the vertical and horizontal axes to form topological regions (e.g., [i] belonging to the 'front-high' region in Fig. 2.16).

In this section, the interpersonal lexicogrammatical MOOD system has been used to exemplify a system of categorically different features (i.e., typology). In the SFL framework, such systems model axial relations at all strata and across all metafunctions. Within the systems, features constitute classes of the unit that represents its entry condition (e.g., indicative and imperative clauses), while realisation statements provide functional configurations ('imperative' ↘ *Predicator: non-finite*). In other words, classes formalise "the paradigmatic potential of a unit", while functions specify "the syntagmatic role[s] some unit is playing" (Caffarel, Martin, & Matthiessen, 2004, p. 34). Furthermore, a topological view on English vowels has illustrated that SFL analysts can use a clined system to complement a categorical perspective on axial relations.

To investigate the generic features of clinical psychology RCT report Introductions and Methods, this study focuses on the system networks of genres that can be deployed to justify a clinical trial and/or provide a recount of the undertaken methodology (*research warrants* in Hood, 2010; Humphrey & Hao, 2013; *scientific genres* in Martin & Rose, 2008; *methodology recounts* in Nesi & Gardner, 2012; Rose & Martin, 2012). In the case of Methods, this is complemented by a topological perspective through a cline of comprehensiveness, as proposed by the ESP body of research (*fast and slow methods* in Bloor, 1999; *clipped and elaborated methods* in Swales, 2004). The theoretical principles underpinning the genre analysis in this research will be further reviewed in Section 2.2.

To explore the realisation of the identified generic patterns at the level of discourse semantics, this study has adopted a multi-functional perspective, relying on ideational, interpersonal, as well as textual systems:

- ideational: IDEATION (experiential) and CONNEXION (logical) (following Hao, 2020a, 2020b; Martin & Rose, 2007);
- interpersonal: APPRAISAL (Hood, 2010; Hood & Martin, 2005; Martin & White, 2005; White, 2003); and
- textual: PERIODICITY (following Martin & Rose, 2007).

The features of these systems and coding conventions used in this thesis will be further reviewed in Section 2.3.

To facilitate the interpretation of language patterns with reference to the social practices of justifying a clinical trial and demonstrating its scientificity, this study draws on:
- a recently developed system network of field (Doran & Martin, 2021);
- Hood's (2010) concepts of the two fields in scientific research: the object of study and the field of research; and
- the topological diagrams of tenor and mode (Martin, 1992; Martin & Rose, 2008).

A detailed review of the registerial configuration pertinent to this study will be provided in Section 2.2.3.3.

2.1.4 Rank

In addition to organising systems metafunctionally, a stratum positions the systems with reference to "the size of the unit they are classifying" (Martin, 2013, p. 62). In other words, each system has "its point of origin" at a particular **rank** within a given strata. Therefore, whereas stratification accounts for the inter-stratal organisation of systems, the dimensions of metafunction and rank are responsible for the intra-stratal system arrangements (see Fig. 2.17).
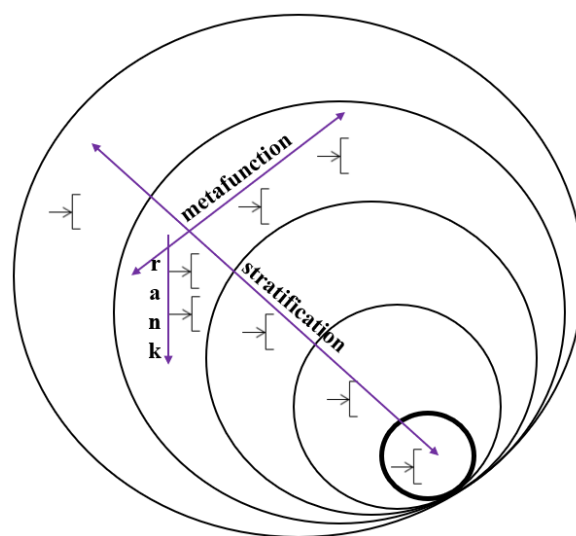
Figure 2.17: Simultaneous dimensions of stratification, metafunction and rank (adapted from Martin & Matthiessen, 1991, p. 350).

The relationship between ranks (i.e., **rank scale**) is based on the general principle of hierarchal constituency, which entails that "an element of any given rank is constructed of

elements of the rank next below" (Halliday & Matthiessen, 2014, p. 84)**.** For instance, there are four unit ranks at the lexicogrammatical stratum: clause, group/phrase, word, and morpheme (Halliday & Matthiessen, 2014). Each clause is composed of groups/phrases, which in turn comprise words, which themselves consist of morphemes. An illustration of a rank scale (from clause to word) is provided in Figure 2.18.
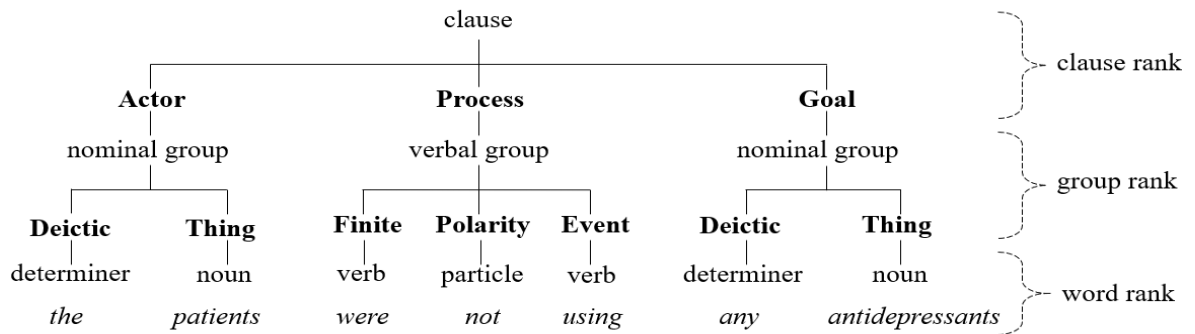
Figure 2.18: An example of rank scale in lexicogrammar (see also Hao, 2020a, p. 17).

As shown in Figure 2.18, each rank involves a **class-function cycle** (Martin, 2013). At the highest rank, the clause is represented through its functional configuration (Actor ^ Process ^ Goal). These clause-rank functions are performed by the unit rank next below – group classes (e.g., nominal groups). Furthermore, each group has its own internal functional configuration (e.g., Deictic ^ Thing), which is realised by classes of words (e.g., determiners or nouns).

Within a stratum, the class-function cycle on the syntagmatic axis provides the basis for organising systems along the rank scale (Halliday & Matthiessen, 2014; Martin, 2013).
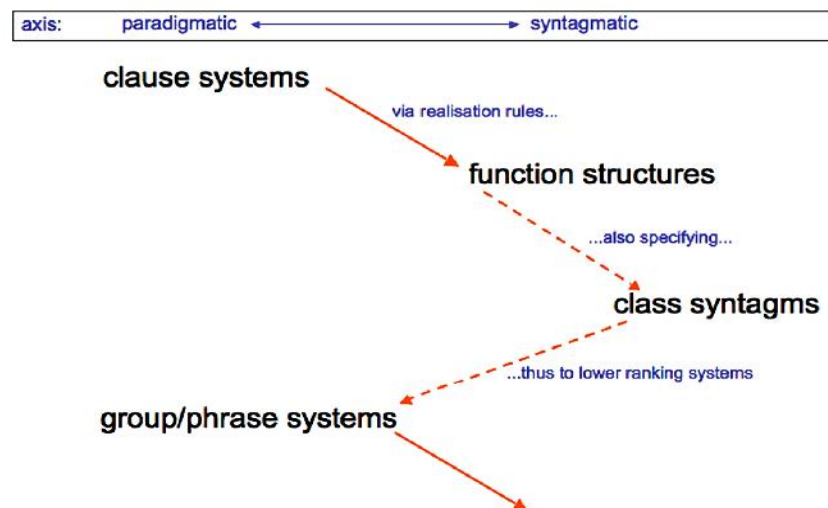
Figure 2.19: System-structure cycles at clause and group/phrase ranks (from Martin, 2013, p. 65).

As illustrated in Figure 2.19, the class that performs a function at the higher rank represents the point of entry for a system at the lower rank. At clause rank, for example, verbal groups function as Processes in the functional structures realising TRANSITIVITY features (e.g., *were not using* in Fig. 2.18). In this case, clause represents the point of entry for the TRANSITIVITY system,

while the verbal group represents the entry condition for verbal group systems (e.g. TENSE in Halliday & Matthiessen, 2014).[9]

The principle of hierarchical constituency underlying the concept of rank scale also allows for the possibility of **rank-shift** (i.e., **embedding**) (Halliday, 1981; Halliday & Matthiessen, 2014; Martin, 2013). Rank-shift refers to the situation in which a unit of one rank is "downranked (downgraded) to function in the structure of a unit of its own rank or of a rank below" (Halliday & Matthiessen, 2014, pp. 9–10). Using another clause extracted from the study's dataset, Figure 2.20 illustrates an instance of an embedded clause functioning as Qualifier within a nominal group structure.
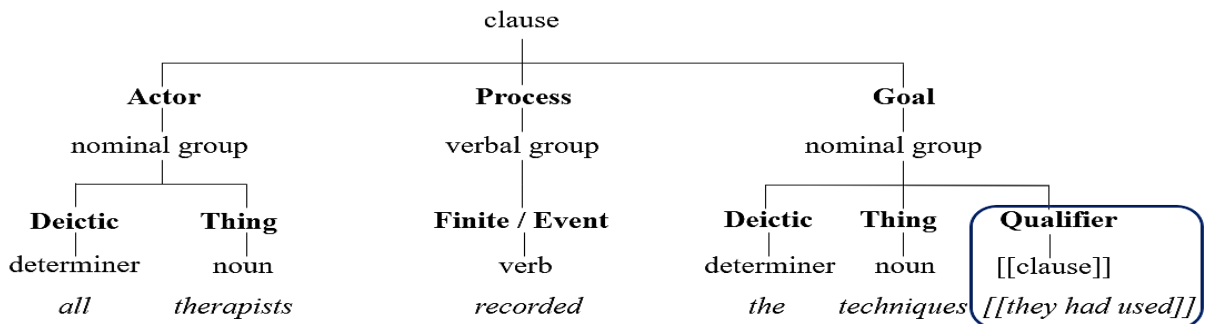
Figure 2.20: An embedded clause functioning as Qualifier in a nominal group.

The key affordance of rankshift lies in the fact that embedding can expand the meaning potential of a bounded multivariate structure. In Figure 2.20, the embedded clause *they had used* (Qualifier) enriches the meanings construed within the Goal nominal group. Ultimately, this expands on the meanings realised in the clause *all therapists recorded the techniques they had used*. As shown above, clause embedding is conventionally marked using double square brackets ([[…]]).

Although this section has focused on lexicogrammar to illustrate rank scale, the rank dimension organises systems at all strata. For instance, it has been posited that **genres** consist of functional **stages** realised by one or more **phases** (Martin & Rose, 2008; Rose, 2006; Rose & Martin, 2012). This is exemplified in Figure 2.21, which shows the generic structure of a literary anecdote from the novel *Follow the Rabbit Proof Fence*, as analysed in Rose (2006).
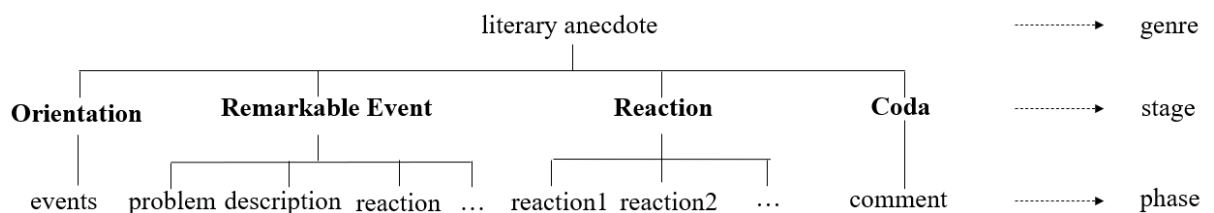
Figure 2.21: Stages and phases in a literary anecdote from the novel 'Follow the Rabbit Proof Fence' (adapted from Rose, 2006, pp. 192–193).

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[9] For an overview of lexicogrammatical systems with reference to metafunction and rank, see the function-rank matrix in Halliday and Matthiessen (2014, p. 87).

In Figure 2.21, the literary anecdote, which belongs to the family of story genres, is represented through its stage structure (Orientation ^ Remarkable Event ^ Reaction ^ Coda). Furthermore, each stage consists of phases (e.g., events), which represent the entry condition of a system at the rank of phase.

As far as rank-shift is concerned, Szenes (2017) emphasises the importance of genre embedding for expanding the meaning potential of argumentative genres. As an illustration, Figure 2.22 shows the generic structure of *the Canada business report* from Szenes' dataset, which is realised by an analytical discussion genre.
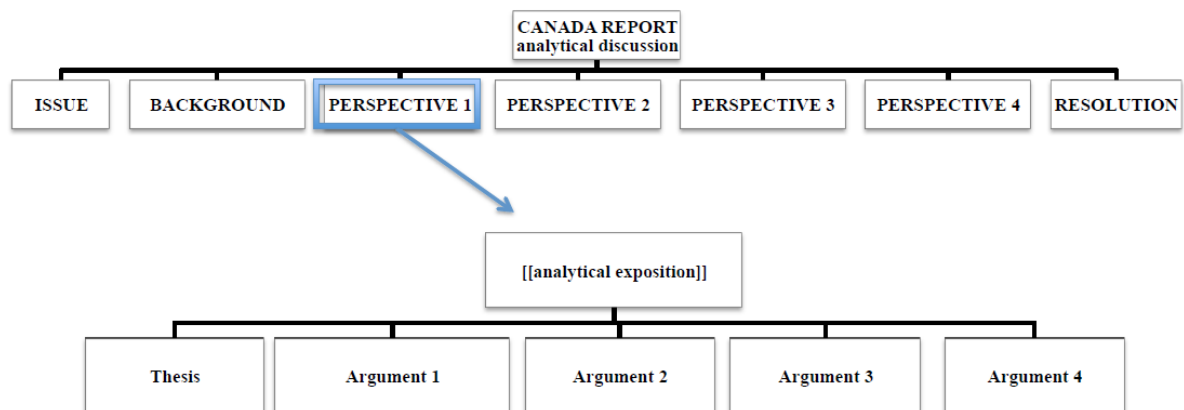
Figure 2.22: An embedded analytical exposition functioning as Perspective 1 in an analytical discussion (taken from Szenes, 2017, p. 136).

As indicated in Figure 2.22, an embedded analytical exposition genre (Thesis ^ Arguments 1-4) is used to construe Perspective 1, adding "depth" to the line of argumentation presented in *the Canada Report*. In this thesis, the rank scale organising the genre stratum is of particular importance for exploring the meaning potential of the Introduction and Method stages in RCT reports. Therefore, genre-stage-phase relations and genre embedding will be further reviewed in Section 2.2.4.2.

2.1.5 Instantiation

So far, this chapter has reviewed the semiotic dimensions that organise language systems in terms of realisation, which can be inter-stratal (stratification) or intra-stratal (metafunction and rank). As already mentioned, a stratified model of language in context allows the analyst to explore semiotic patterns at different levels of abstraction (e.g., genre and discourse semantics). To complement the concept of realisation, SFL also incorporates the dimension of **instantiation** (see Fig. 2.23), which refers to a cline of generalisation that exists between a language system and text (Halliday & Matthiessen, 2014).
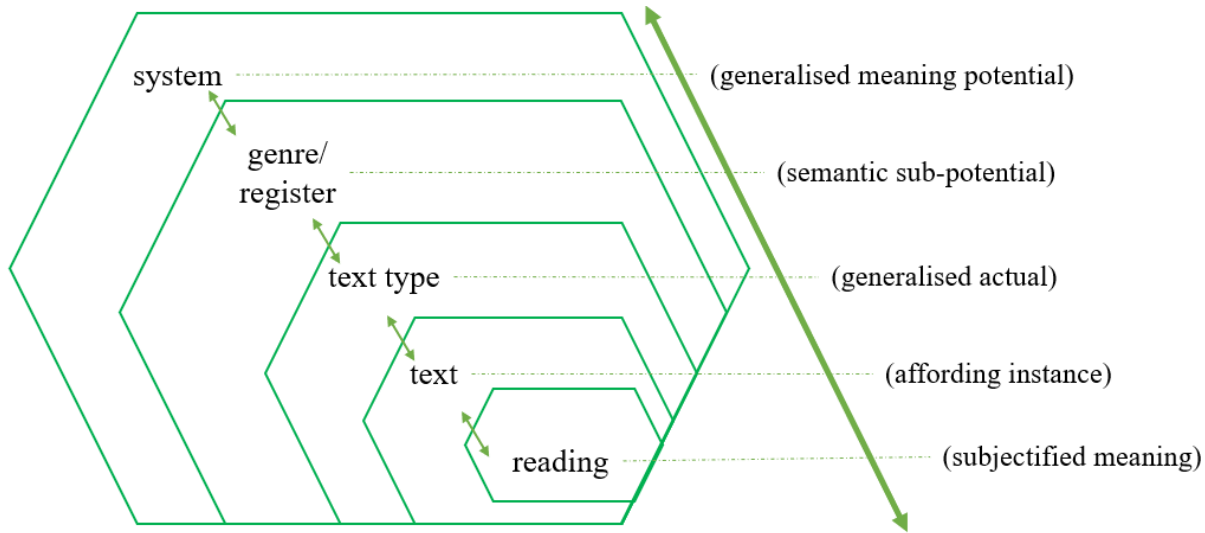
Figure 2.23: Instantiation as a hierarchy of generalisation (adapted from Martin, 2009, p. 559; Martin & White, 2005, p. 25).

As illustrated in Figure 2.23, a language system is perceived as a generalised meaning potential. Moving along the cline, genre/register represents a semantic sub-potential that varies according to language use (e.g., scientific language). Located between genre/register and a particular text, the level of text type refers to a set of similar instances that is not large enough to be generalised as a generic/registerial sub-potential. As the "ultimate instance", Martin and White (2005, p. 25) have introduced the level of a particular reading that is dependent on "the social subjectivity of readers."

When it comes to the complementarity between realisation and instantiation, it is important to emphasise that "all strata along the realisation hierarchy instantiate" (Martin, 2009, p. 558). In other words, each stratum, be it genre or graphology/phonology, contains system networks that represent a meaning potential that can be instantiated in the form of a text (see Fig. 2.24).
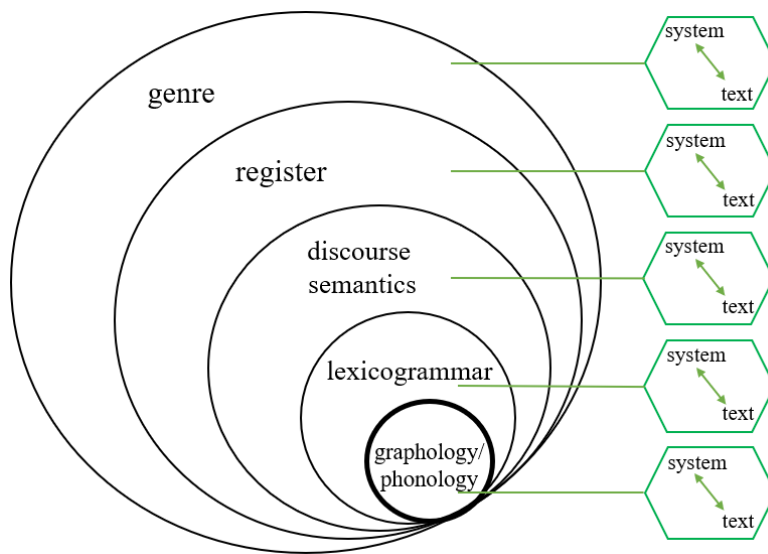
Figure 2.24: Realisation in relation to instantiation (adapted from Martin, 2009, p. 559).

Furthermore, it needs to be highlighted that system and text do not stand in opposition; rather, they are observed as complementary. As Halliday (2007) suggests, the relationship between system (i.e., a generalised meaning potential) and text (i.e., an instance) is analogous to the one that exists between *climate* and *weather*:

> Weather and climate are not two different things, they are the same thing, which we call *weather* when we are looking at it close up, and *climate* when we are looking at it from a distance. The weather goes on around us all the time; it is the actual instance of temperature and precipitation and air movement that you can see and hear and feel. The climate is the potential that lies behind all these things; it is the weather seen from a distance, by an observer standing some way off in time (p. 276).

Therefore, an SFL analysis deals with instantiated language patterns (i.e., what was written/said) and interprets them with reference to a generalised meaning (sub-)potential (i.e., what could have been written/said). At the same time, the analysed instances are used to provide generalisations (i.e., what can be written/said). In this study, the existing genre and discourse semantic systems are used to identify and interpret the generic and discourse semantic patterns instantiated in clinical psychology RCT report Introductions and Methods. Concurrently, the identified patterns are employed to generalise about the meaning sub-potential for structuring two text types – Introductions and Methods – in terms of generic structure and discourse semantic resources.

2.1.6 Semogenesis

As a social semiotic, language is in a constant state of change. In SFL, this semiotic change (i.e., **semogenesis**) can be observed with reference to three time-frames: **logogenesis** (unfolding), **ontogenesis** (growth), and **phylogenesis** (evolution) (Halliday & Matthiessen, 1999).

As the shortest time-frame, **logogenesis** is concerned with the unfolding of meanings in texts. For example, Martin and White (2005) focus on the logogenesis of appraisal, exploring evaluative "prosodies, shifts in key and the phases and staging of various genres" (p. 26). Similarly, a logogenetic perspective has been adopted to explore a meaning potential of research articles with reference to generic structure and discourse semantic features (Hood, 2010; Humphrey & Hao, 2013; Nesi & Gardner, 2012).

As a relatively longer time-frame, **ontogenesis** examines the development of a personalised meaning (sub-)potential. Halliday (1975) and Painter (1984, 1999), for instance, have conducted case studies of children learning how to mean in their mother tongue. Similarly, the "Sydney School" has been concerned with expanding the ontogenetic meaning potential of students (Dreyfus et al., 2015; Martin & Rose, 2008; Rose & Martin, 2012).

Lastly, **phylogenesis** is interested in the evolution of meaning potential of the human species belonging to a given culture. A remarkable amount of SFL research examining the

evolution of scientific English through the process of nominalisation is a case in point (e.g. Halliday & Martin, 1993; Martin & Veel, 1998; Maton et al., 2021). According to Halliday and Martin (1993), "the birth of science (…) is realized semiotically by the birth of grammatical metaphor" (p. 16).

To explore a linguistic construction of a scientific foundation in clinical psychology RCT reports, this thesis deals with the logogenetic unfolding of generic structure and discourse semantic resources in the "pre-Results" stages.

2.1.7 Concluding remarks

The previous sections provided a critical overview of the systemic functional theory of language underpinning this thesis – SFL. To explore a linguistic construction of trial justification and scientificity in clinical psychology RCT reports, this research is primarily concerned with axial relations at the genre and discourse semantic strata. Adopting a trinocular perspective, it also draws on registerial and lexicogrammatical meaning-making resources to observe the identified phenomena from "above" and "below". Through a multi-stratal and multi-functional investigation of logogenesis in RCT report Introductions and Methods, it relates the generic patterning to the ideational, interpersonal, and textual discourse semantic patterns that realise them. Ultimately, the purpose of this study is to propose a meaning potential for structuring text types that are oriented towards construing a sound scientific base for medical knowledge extension. Prior to any further discussion on the questions, data and procedures used in this study, however, it is necessary to elaborate on the SFL analytical tools that are available for exploring text structure and discourse semantic features.

2.2 A systemic functional genre theory

As discussed in Section 2.1.1, a distinction can be made between two SFL models of register: (a) register as a situation type (following Halliday, 1978; Halliday & Hasan, 1985); and (b) register as a semiotic stratum realising genre (following Martin, 1992, 1999). As a result, the SFL discourse community has developed different approaches to investigating text structure. Following Halliday, the registerial field variable has been foregrounded as a criterion for developing a cartography of text types (Matthiessen, 2014, 2015; Matthiessen & Pun, 2017) and defining generic structure potential (Hasan, 1977, 1984, 1985). On the other hand, Martin's modelling of context has led to the emergence of the "Sydney School" genre-based pedagogy (Martin & Rose, 2008; Rose & Martin, 2012; Rothery & Stenglin, 1994).

2.2.1 Registerial cartography of text types: fields of social activity and rhetorical structuring

In his "registerial cartography" project, Matthiessen (2014, 2015) argues that a context-based mapping of text types and their rhetorical organisation should be based on **field of activity**. In this approach to analysing text structure, tenor and mode are perceived as secondary variables that interact with the field to allow for the structural variations found within the same text type (see, e.g., Halliday & Matthiessen, 2014).

According to Matthiessen, field of activity represents a **socio-semiotic process** and can be defined as "what's going on in context" (2014, p. 8). His field-based mapping of socio-semiotic processes proposes eight primary fields of activity: **expounding**, **reporting**, **recreating**, **sharing**, **doing**, **enabling**, **recommending**, and **exploring** (see Fig. 2.25).
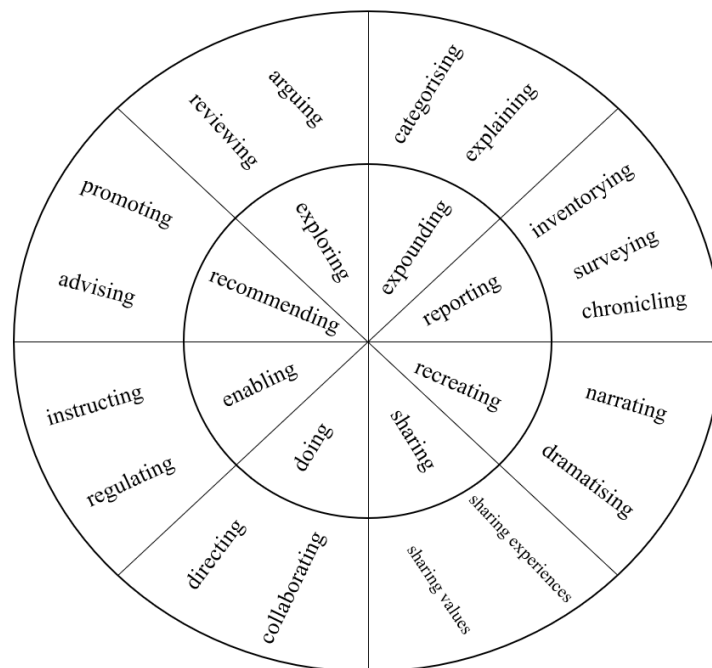
Figure 2.25: Matthiessen's filed-based map of activities as socio-semiotic processes (adapted from Halliday & Matthiessen, 2014, p. 37).

As illustrated in Figure 2.25, each primary field of activity comprises two or three more delicate types of a given socio-semiotic process. For instance, the activity of *expounding*, which is characteristic of scientific journal articles, can be broken down into two secondary types: *categorising* and *explaining*.

Building on Rhetorical Structure Theory (RST), it has been postulated that there is a correlation between a type of activity and the logico-semantic relations that exist between adjacent **text spans** consisting of at least one clausal unit (Matthiessen, 2014; Matthiessen & Pun, 2017).[10] Therefore, the goal of an RST-based analysis is to describe a field-specific text organisation in terms of **nucleus-satellite** (hypotactic) and **multinuclear** (paratactic) relations (see Fig. 2.26).

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[10] For a detailed discussion on Rhetorical Structure Theory, see Mann, Matthiessen and Thompson (1992).
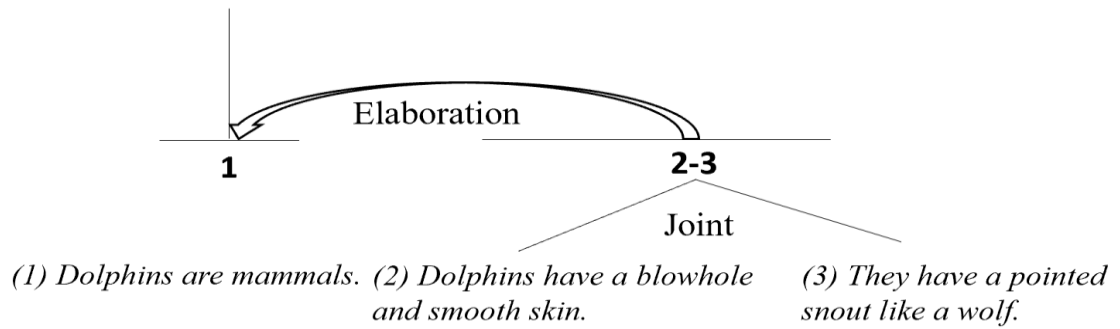
Figure 2.26: An RST analysis of a taxonomic report on dolphins (adapted from Matthiessen & Pun, 2017, p. 14).

To illustrate, Figure 2.26 showcases an RST analysis of a simplified taxonomic report on dolphins, in which knowledge is *expounded* through *categorisation* (Matthiessen & Pun, 2017). In this report, the text spans (2) and (3) are in a paratactic Joint relation, which means they are both nuclei (*Dolphins… [AND] They…*). These spans form another text span (2-3), which provides additional information on *dolphins* as a kind of *mammal*. In other words, there is a hypotactic Elaboration relation between the satellite (2-3) and the nucleus (1). As shown in this example, each text span can enter multiple relationships as either nucleus or satellite.

When it comes to investigating the structure of research articles, the RST approach has been applied in Rimrott's (2006) analysis of Abstracts. For instance, Figure 2.27 shows Rimrott's analysis of the article titled *ESL students' use of concordance in the transfer of academic world knowledge: An exploratory study*.
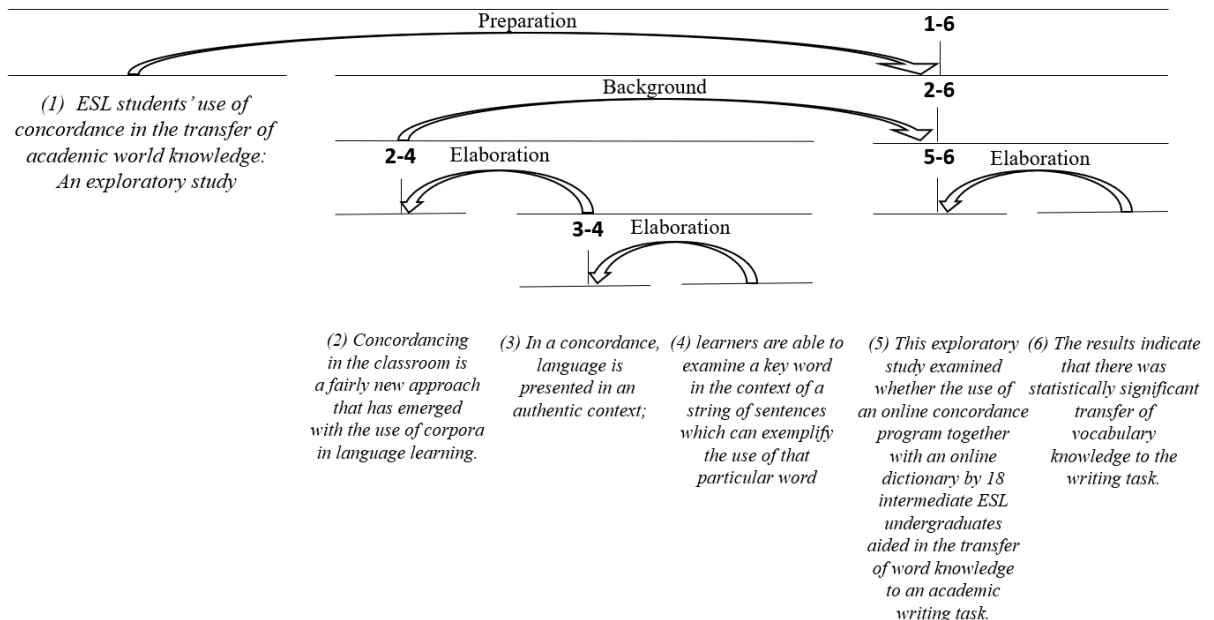
Figure 2.27:Rimrott's RST analysis of an RA Abstract (adapted from Rimrott, 2006, p. 216).

At the top level, the title in (1) enters the Preparation relation with the abstract (2-6). At the second level, the (2-4) span provides information on a language pedagogy explored in the study – *concordancing in the classroom*. This facilitates the reader's understanding of the (5-6) span,

which introduces the aims and results of the study (*This exploratory study examined…The results indicate…*). Therefore, the (2-4) span is a Background satellite of the (5-6) span. At the third level, the (3-4) span (*In a concordance…; learners are able…*) offers Elaboration on (2) (*Concordancing is…*). Concurrently, the study results in (6) are an Elaboration of the study goal presented in (5). Finally, the description of *concordancing* in (4) represents an Elaboration of its description in (3).

As demonstrated in this section, Matthiessen's field-based approach to mapping text types and their rhetorical-relational organisation can offer a considerable insight into the logico-semantic relations underpinning textual coherence. However, the presented analyses also highlight two significant limitations to applying this analytical framework in exploring a linguistic construction of a sound scientific base in RCT report Introductions and Methods. First, by prioritising the field variable and logico-semantic relations, the remaining registerial variables and corresponding discourse semantic resources would have remained either under- or unexplored. Consequently, it is reasonable to assume that many important linguistic patterns would have been missed. Second, although an RST analysis of longer texts such as Introductions or Methods is theoretically feasible, the process would have likely resulted in illustrations that are too lengthy and/or convoluted. Therefore, such analysis would have also hindered the pedagogical applications of this study.

2.2.2 Generic Structure Potential

Another SFL-based approach that explores text structure with reference to context is Hasan's **Generic Structure Potential (GSP)** (Hasan, 1977, 1984, 1985). Hasan argues that text structure (i.e., GSP) can be determined by the **contextual configuration (CC)** of field, tenor, and mode. Similar to Matthiessen's registerial cartography, however, Hasan's GSP privileges field over tenor and mode (e.g., *fields of discourse* in Hasan, 1999). In the GSP model, it is posited that CC can be employed to make predictions about text structure regarding: (a) **obligatory** and **optional** structural elements; (b) **sequencing** (i.e., ordering of elements); and (c) **recursion** (i.e., the possibility of an element appearing more than once). In her studies on text structure, Hasan used GSP to analyse relatively short texts such as "medical appointment-making conversations", "nursery tales", and "service encounters".

As far as research genres are concerned, the GSP framework has been tested in Paltridge's (1997) study on RA Introductions. Drawing on his analysis of 12 texts, Paltridge formulated a GSP that comprises:

- two obligatory stages: *Previous Research* and *Purpose of Study*; and
- six optional stages: *Background Information*, *Question Raising*, *Indicating a Gap*, *Justification for Study*, *Context of Study*, and *Rationale for Study* (see Fig. 2.28).
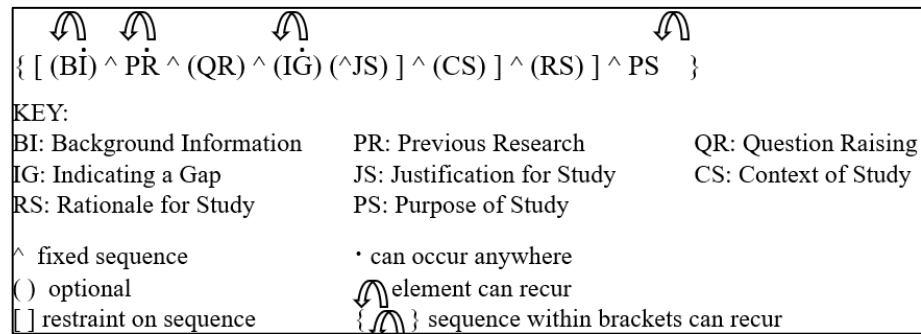
Figure 2.28: Generic Structural Potential (GSP) of RA Introductions identified by Paltridge (adapted from 1997, p. 69).

As shown in Figure 2.28, the identified GSP of RA Introductions includes sequencing (e.g., *Previous research* precedes *Purpose of Study*; *Background Information* can occur anywhere) as well as recursion (e.g., *Background Information* can recur). Following the GSP formulation, Paltridge conducted a validation test that entailed a genre analysis of three additional texts (see 2.1-3).

(2.1) Text 13: Previous Research ^ Question Raising ^ Previous Research ^ Purpose of Study ^ Materials ^ Results

(2.2) Text 14: Background Information ^ Previous Research ^ Background Information ^ Previous Research ^ Indicating a Gap ^ Purpose of Study

(2.3) Text 15: Background Information ^ Previous Research ^Indicating a Gap ^ Previous Research ^ Background Information ^ Previous Research ^ Purpose of Study ^ Results ^ Conclusions

As can be seen in (2.1-3), each of the three RA Introductions contains both obligatory elements as well as some of the optional elements, all occurring according to the identified GSP. In addition, the validation test revealed three optional elements that had not been previously specified: *Materials ^ Results* in (2.1) and *Results ^ Conclusions* in (2.3). Due to the emergence of the new elements, Paltridge concluded that "the structure of a text is, at no point of its own (…) genre defining" (1997, p. 104). This thesis, however, disagrees with this claim since such conclusion rejects the existence of an instantiation cline (see Section 2.1.5). In other words, the GSP should not be observed as a set of predetermined rules; rather, it represents "a system-like object whose potential is an 'array of actual structures'" (Hasan, 1977, p. 241). Furthermore, Paltridge's sample of 12 RA Introductions is arguably too limiting to allow for a generalised GSP at the level of a generic potential. Therefore, the sample can only be used to formulate a GSP at the level of text type (i.e., 'generalised actual'). As a matter of fact, it can be argued that Paltridge's validation test study revealed a rather high level of consistency, which in turn suggests that textual structure tends to be genre-sensitive.

In summary, the GSP approach to text structure enables the analyst to generalise about the identified structures with reference to obligatory/optional stages and their sequencing/recursion. Drawing on the analyses of actualised text structures in the dataset, this

study uses GSP to extrapolate the systemic features available to clinical psychology RCT report writers for structuring Introductions and Methods. As "a structural potential naturally invites an axial interpretation" (Martin, 2016, slide 44), the identified GSP is formalised through system networks and realisation statements. Unlike Hasan's mapping of discourse fields (1999), however, this thesis uses genre as the systems' entry condition, which is in line with the concept of **genre agnation** within the "Sydney School" tradition (see Section 2.2.3). Specifically, the proposed system networks will form the basis for the discussions on the social practices (argumentation, explanation, etc.) that can or must be enacted in order to construe a sound scientific base for medical knowledge extension.

2.2.3 The 'Sydney School' genre pedagogy

According to Martin (1984), **genre** is "a staged, goal-oriented, purposeful activity" in which language plays a crucial role (p. 25). It is *purposeful* because language is used to achieve a particular goal within a social context; it is *staged* because it often takes the writer/speaker more than one step to accomplish that goal. In other words, genres represent "recurrent configurations of meaning [that] enact the social practices of a given culture" (Martin & Rose, 2008, p. 6). In response to growing concerns over the lack of literacy programs in Australian primary and secondary schooling, the analysis of school genres emerged as a key priority for a group of educational linguists led by James Martin in the '80s and '90s (e.g. Christie & Martin, 1997; Cope & Kalantzis, 1993; Martin & Painter, 1986; Rothery, 1994).[11] This line of research, known as the **"Sydney School" genre pedagogy**, has been highly influential in the development of intervention projects aimed at scaffolding literacy in Australian educational contexts (e.g. the SLATE project in Dreyfus et al., 2015; the Reading to Learn project in Rose & Martin, 2012).

As mentioned in Section 2.1.6, the "Sydney school" genre pedagogy is oriented towards expanding the ontogenetic meaning potential of students through literacy programs. To accomplish this goal, this body of research seeks to identify recurrent configurations of meaning that enact highly valued social practices in an educational environment. A recurrent patterning of linguistic resources into a discernible **schematic structure** (i.e., staging) has been used to organise school genres according to their social purpose (*engaging*, *informing*, and *evaluating* in Rose & Martin, 2012) in disciplines such as science (e.g. Halliday & Martin, 1993; Martin & Veel, 1998), history (e.g. Coffin, 2006; Eggins et al., 1993; Martin & Wodak, 2003), English language and literature (e.g. Christie & Dreyfus, 2007; Christie & Macken-Horarik, 2011), or geography (e.g. Humphrey, 1996; van Leeuwen & Humphrey, 1996). More recently, the

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[11] For a comprehensive review of research into primary and secondary schools in Australia, see Christie (2012) and Christie and Derewianka (2008).

"Sydney school" pedagogy has also inspired several investigations into genres characteristic of higher education (e.g. Dreyfus et al., 2015; Hood, 2010; Humphrey & Dreyfus, 2012; Humphrey & Hao, 2013; Nesi & Gardner, 2012; Szenes, 2017).

As mentioned in Chapter 1, the RCT report genre is typically produced by a team of expert clinical researchers with the aim of extending knowledge of the medical discourse community. As will be demonstrated in Chapters 3 and 4, a linguistic construction of trial justification and scientificity relies on the writer's control of a wide range of school genres introduced at different levels of science education. Arguably, it is the knowledge of these genres that can be used to scaffold literacy of novice clinicians in a/n under-/postgraduate research training environment.

2.2.3.1 Genres in science

In the "Sydney School", genre agnation in science revolves around the role of time in generic structuring (see Fig. 2.29).
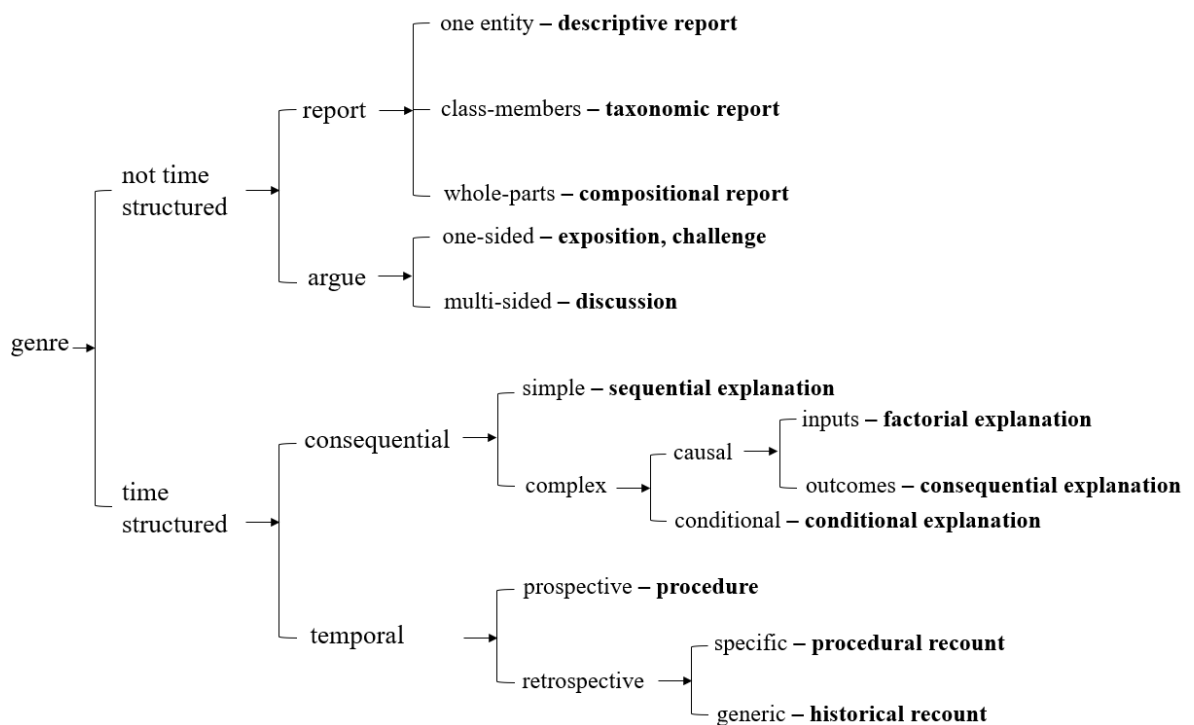
Figure 2.29: Genre agnation in science (adapted from Martin & Rose, 2008, p. 167).

As indicated in Figure 2.29, the schematic structures of 'reporting' and 'arguing' genres do not unfold in time. While the former genres focus on describing and organising scientific phenomena in terms of classification ('class-members') or composition ('whole-parts'), the latter are concerned with promoting/challenging scientific positions via 'one-sided' arguments or 'multi-sided' perspectives. In contrast, explanatory genres and procedures/recounts unfold as activity series that foreground 'consequential' and 'temporal' relations, respectively. More precisely, 'consequential' genres are used to explain 'simple' or 'complex' series of cause-

effect links. On the other hand, 'prospective' procedures prescribe how a series of activities or observations should be performed, while 'retrospective' recounts report on observations and experiments.

According to Martin and Rose (2008, p. 200), **research articles** (RAs), which include RCT reports, should be classified as **procedural recounts**. The social purpose of RAs is to outline the steps involved in "producing science", which entails "adding to and modifying the knowledge base of the scientific field" (Martin & Rose, 2008, p. 207). Table 2.1 shows a prototypical schematic structure of the RA genre and summarises the social functions attached to each stage.

Table 2.1: The schematic structure of a research article (adapted from Martin & Rose, 2008, p. 207)

RA genre staging	Social functions
Introduction ^	- locating the study within the existing literature; - identifying an issue that has not been addressed; - outlining the aims of the study;
Methods ^	- presenting experimental methods, including equipment and procedures;
Results ^	- presenting experiment results: (i) graphically, (ii) mathematically; and (iii) verbally;
Discussion ^	- interpreting the results; - reasoning about the probable cause of the issue in question;
(Conclusion)	- summary of reasoning

In this thesis, it is argued that an interpretation of lengthy RCT reports as procedural recounts only accounts for their global structure. To add depth to trial justification and reinforce the scientificity of its methodology, Chapters 3 and 4 will demonstrate that RCT report writers utilise multiple layers of genre embedding to construe Introduction and Methods stages. This is in line with several SFL studies on genres in higher education, which have suggested that genre embedding/complexing is often used to deal with the increasing complexity involved in the social practice of "doing science" (see Hood, 2010; Humphrey & Hao, 2013; Szenes, 2017). However, before proceeding to a discussion of genres characteristic of experimental research, it is necessary to review the structural configurations of genres in science that are typically introduced in pre-tertiary science education (following Martin & Rose, 2008; Rose & Martin, 2012). The genres that are of significance for this thesis include **descriptive reports**, **expositions/challenges/discussions** (i.e., argumentative genres), **factorial explanations**, and **recounts**.

In science, **descriptive reports** are used to introduce a phenomenon and elaborate on its features (Martin & Rose, 2008, pp. 142–143). Usually, they begin with a Classification stage that classifies an entity, locating it within a more general scientific field (e.g., *goannas* → type → *lizards*). This is followed by a Description stage that describes the phenomenon with reference to its salient features (e.g., *appearance* and *behaviour* of *goannas*). As will be

discussed in Chapter 3, clinical psychology RCT report writers use descriptive reports to inform the readership on: (a) the psychological disorder under investigation; or (b) a promising line of research.

If an interpretation of a phenomenon or event is perceived as contestable, 'arguing' genres can be employed to substantiate a claim or critique. In this case, a writer may opt to use one-sided expositions/challenges or multi-sided discussions (Coffin, 2006; Martin & Rose, 2008, pp. 118–124). Prototypical **expositions** open with a Thesis stage, which is followed by one or more Argument stages and an optional Reiteration of thesis. In expositions, all Argument stages are aimed at promoting the opening position without introducing alternative positions. Similarly, **challenges** (i.e., anti-expositions) start with a Position stage, which is then neutralised through one-sided Rebuttal arguments. In a challenge, Rebuttal arguments provide justification for an alternative position presented in the subsequent Anti-thesis stage. On the other hand, **discussions** give space to competing positions, with the opening Issue stage being followed by several Perspectives/Sides. Discussions usually end with a Resolution stage as writers tend to make APPRAISAL choices that promote a single position while undermining all the others (for a discussion on APPRAISAL, see Section 2.3.3).

To build an effective line of argumentation, writers organise their expositions, challenges, or discussions via rhetorical structuring. In other words, arguments/perspectives are introduced with a view to aligning the readership with the writer's conclusions (see internal CONNEXION in Section 2.3.2.2). Following Martin and Rose (2008), Table 2.2 summarises the prototypical schematic structures of 'arguing' genres as well as their social functions and salient linguistic features.

Table 2.2: Key features of exposition, challenge, and discussion (adapted from Martin & Rose, 2008, p. 137).

Genre [staging]	Social functions	Key linguistic features (Halliday, 1994; Martin, 1992)
exposition [Thesis ^ Arguments ^ (Reiteration of Thesis)]	one-sided promotion: a problematic interpretation that needs justifying	internal connexion keying on thesis
challenge [Position ^ Rebuttal arguments ^ Anti-thesis]	one-sided rebuttal: someone else's problematic interpretation that needs demolishing	internal connexion keying on thesis
discussion [Issue ^ Perspectives ^ Resolution]	multi-sided adjudication: more than one interpretation considered	internal connexion keying on thesis; internal organisation of points of view

In this thesis, 'arguing' genres are of great importance for construing trial justification in RCT report Introductions. They are often used to promote or oppose the official treatment recommendations pertinent to the disorder under investigation (see Chapter 3). For the purpose of this study, two minor adjustments have been made regarding the stage labels. As will be shown in Chapter 3, RCT report writers use existing medical research to advance or question a

position, regardless of the chosen genre. Consequently, the terms *thesis* and *issue* have been replaced with *position*. Furthermore, the label *rebuttal arguments* has been replaced with *counter-arguments*, which reflects the fact that the analysed challenges are not aimed at discrediting the existing medical guidelines. Instead, the evidence is used to oppose the universality of the proposed solutions, justifying a trial of alternative treatments. The nomenclature used in this thesis is summarised in (2.4-6).

(2.4) exposition: Position ^ Arguments ^ Reiteration of position

(2.5) challenge: Position ^ Counter-arguments ^ Counter-position

(2.6) discussion: Position ^ Perspectives ^ Resolution

If there are multiple causes for a phenomenon, **factorial explanations** can be employed to explain complex cause-effect relations (Martin & Rose, 2008, pp. 157–159; Unsworth, 2001). Typically, a factorial explanation opens with a Phenomenon stage, which is followed by two or more Factor stages. In addition, the writer has an option to end the explanation with an Extension stage. Within a text, multiple Factors are added internally, one after another (see internal CONNEXION in Section 2.3.2.2). Concurrently, each Factor enters an external cause-effect relation with the Phenomenon stage, construing **implication sequences** (Wignell, Martin, & Eggins, 1993; also see external CONNEXION in Section 2.3.2.1). In this thesis, factorial explanations are of interest because they can be used to review the existing research on the underlying causes of a psychological disorder (see Chapter 3). Table 2.3 provides a summary of the prototypical features of a factorial explanation.

Table 2.3: Key features of factorial explanations (adapted from Martin & Rose, 2008, pp. 135, 157).

Genre [staging]	Social functions	Key linguistic features (Halliday, 1994; Martin, 1992)
factorial explanation [Phenomenon ^ Factors ^ (Extension)]	phenomenon explanation via two or more contributing factors	text internal organization of factors; factors externally linked to outcome; cause within clause; mainly generalised and nominalised participants;

As mentioned earlier in this section, procedural recounts such as research articles or experimental reports are used to recount an investigative procedure aimed at extending knowledge. Since pre-tertiary education prioritises knowledge consumption over production, procedural recounts are mainly produced by under-/postgraduate students (see Hao, 2015) and more senior scholars (see Hood, 2010; Martin & Rose, 2008). Starting from primary schools, however, students are exposed to procedural ("how-to") genres that provide step-by-step instructions on how to perform an activity (see, e.g., Humphrey & Vale, 2020). In these texts, the opening Goal stage is followed by a series of Steps sequenced in time. In addition, secondary school students are likely to encounter simplified procedural recounts reporting on a scientific

experiment. To illustrate, Table 2.4 shows an extract from the procedural recount sequencing the steps undertaken by biologist Lynn Baker in her field research (Martin & Rose, 2008, pp. 199, 200).

Table 2.4: A simplified procedural recount (adapted from Martin & Rose, 2008, pp. 199, 200)

Genre staging	Text: 'The mulgara at Uluru National Park'
Step 1 ^	Before leaving on the field trip to Uluru National Park, Lynn identified the issue she wanted to study [why mulgara appear to be in some areas] and spent time researching it.
Step 2 ^	The field trip involved: 1. making observations 2. collection and recording information
Step 3 ^	Lynn's next step was to carefully study her observations to see what they told her… and she started to develop a theory…
Step 4	She developed a plan to manage the environment…

In Table 2.4, the staging of Lynn's research steps reflects a prototypical investigative procedure presented in research articles: introduction/literature review (*identified the issue and spent time researching it*), method (*the field trip*), results (*carefully study her observations to see what they told her*), and discussion/conclusions (*developed a plan*). Therefore, such texts can be used to familiarise the students with the process of doing experimental research. In addition, it can be argued that specific step-by-step recounts serve as a stepping stone to reading and writing more generic methodology recounts in university settings (cf. "moving from stories to histories" in Martin & Rose, 2008). This is further elaborated in the following section.

2.2.3.2 Moving from knowledge consumption to knowledge production: research genres

In higher education settings, written assignments often report on research projects that require (a) appropriate justification; and (b) application of the theoretical frameworks that underpin data collection and analysis/interpretation (see, e.g., Nesi & Gardner, 2012). Put simply, university students are expected to transition from being avid learners to being reliable knowledge producers. This in turn requires mastery of longer research genres that can enact rather complex social practices involved in "doing science". In the last decade, SFL scholarship has become increasingly interested in the schematic structures of research genres, including those produced by expert researchers (*research warrants* in Hood, 2010) and under-/postgraduate students (e.g. undergraduate biology laboratory/research reports in Hao, 2015; interpretative genres in postgraduate applied linguistics in Humphrey & Dreyfus, 2012; undergraduate biology research warrants in Humphrey & Hao, 2013; research reports/literature surveys/methodology recounts in Nesi & Gardner, 2012). According to this body of research, research-oriented genres in higher education tend to build on the genres in science that have already been introduced in pre-tertiary education. For this thesis, the schematic structures of

research warrants and **methodology recounts** are of particular interest because they have been found to construe Introduction and Method stages of RCT reports (see Chapters 3 and 4).

In SFL, RA Introductions have been found to be realised by a series of genres that constitutes a macrogenre called **research warrant** (Hood, 2010). The "research warrant" label is reflective of its social function, which is to persuade the reader of "the legitimacy of the study" (Hood, 2010, p. 39). According to Hood (2010), the process of research justification unfolds rhetorically through two lines of persuasion, which is the basis for distinguishing between two fields in introductory sections. To show that a topic is worthy of investigation, writers first describe and evaluate "entities and/or activities that constitute [*the field of*] *the object of study*" (p. 121, emphasis added). To demonstrate a need for further research, the writers also appraise the **field of research** (i.e., **study**), which refers to "the entities and activities to do with the process of enquiry and knowledge building" (p.121).[12] Based on shifts in field occurring within research warrants, Hood's study identified a serial structure comprising the following "sub-genres":

- a descriptive report on the object of study; followed by
- a descriptive report on the general field of study (i.e., literature review); and
- a description of the specific field of study (i.e., the writer's study).

Textually, the field shifts can be observed through an analysis of initial clausal elements, which is in line with Martin and Rose's argument that "the main recurrent choice for Subject/Theme (…) gives us our basic orientation to the field for this phase of discourse (2007, p. 197). For instance, Table 2.5 shows an abridged version of a research warrant in applied linguistics, as analysed in Hood (2010).

Table 2.5: An abridged research warrant in applied linguistics (adapted from Hood, 2010, p. 34).

genres	Text
descriptive report	**Online instruction*** is a form of distance education delivered over the Internet. **It** is a major breakthrough in teaching and learning.
descriptive report	**There is little research** to accurately determine the benefits and pitfalls of online instruction. (…) **The need for research in this area** is not only timely, but also imperative.
description	**The primary purpose of this exploratory empirical study** was to compare an online course with an equivalent course taught in a traditional face-to-face format.

***Bold font** indicates the elements that have been given thematic prominence.

As can be seen in Table 2.5, a change in the selection of thematic elements indicates a shift in field (the object of study: *online instruction/it*; the general field of study: *there is little research/the need for research in this area*; the specific field of study: *the primary purpose of this exploratory empirical study*). In turn, a shift in field signals a new genre within the series

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[12] The use of APPRAISAL resources in research warrants will be discussed in detail in Section 2.3.3.

(e.g., transitioning from a descriptive report on *online education* to the one on the relevant *research* area).

Drawing from Hood's (2010) study of RA Introductions, Humphrey and Hao (2013) describe the structure of Introductions in third year biology students' research reports as research warrant macrogenres. However, there are some significant differences between the two models of research warrants. Unlike Hood, Humphrey and Hao posit that research warrants in undergraduate biology contain explanatory genres that are embedded into descriptive reports. Although the authors do not elaborate on how an explanatory schematic structure becomes a part of a descriptive report, this suggests a constituent structure, which is at odds with Hood's concept of serial structures. Arguably, another indication of Humphrey and Hao's multivariate view on research warrants can be seen in their decision to "focus on how these [descriptive] sub-genres are recontextualized to form stages in building an argument to justify students' own research" (2013, p. 36). In other words, genres are observed as elements that perform distinct functions in a research warrant, as shown by the stage labels used in their structural analysis (see Table 2.6).

Table 2.6: An abridged research warrant in undergraduate biology research report (adapted from Humphrey & Hao, 2013, pp. 36, 37)

Genre staging	Text: "The role of the muscarinic (M2) receptor of zebrafish (Danio rerio) embryos under hypoxic stress"
Significance of phenomenon (hypoxia)	Oxygen is essential for the survival of most living organisms and is important for rexidative breakdown of energy sources to generate energy. A limited supply of oxygen could be a serious problem depending on the tissue type where oxygen shortage (hypoxia) occurs.
Description of research findings	It has been shown that oxygen is not only important to terrestrial organisms but also important to aquatic organisms…
Research justification	Although these studies have demonstrated the general adverse effects of chronic aquatic hypoxia on the heart, little is known about the underlying molecular mechanisms of the M2 mAChR…
Purpose	The purpose of this research is to find out the role of the M2 muscarinic receptor of zebrafish (Danio rerio larvae) under hypoxic stress….
Hypotheses	Heart rate of the developing zebrafish larvae could be down-regulated by hypoxia…
Objectives	Based on this hypothesis, the objectives of this study are (1) use different agonists to find out the onset of the M2 mAChR…

As indicated in Table 2.6, the functional configuration represents a multivariate structure with a definitive set of distinct functions (*Significance of phenomenon ^ Description of research findings ^ Research justification ^ Purpose ^ Hypotheses ^ Objectives*). In contrast, Hood's analysis, which was exemplified in Table 2.5, shows a univariate structure that involves the iteration of the same (genre) element (for a discussion on *multivariate* and *univariate structures*, see Section 2.1.2). As will be shown in Chapter 3, this study has identified three distinct stages in research warrants that function as RCT report Introductions (*Topic significance ^ Evidence ^ Response*), which seems to support Humphrey and Hao's multivariate

approach. Nevertheless, a multivariate stance on research warrants raises the question of whether they should be analysed as macrogenres or (elemental) genres. As this represents a methodological issue that is of high importance for this thesis, it will be discussed in detail in Section 2.2.4.

In their study on genres in higher education, Nesi and Gardner (2012) state that "methodology recount assignments prepare [university] students for the methodology chapter of empirical projects" (p. 153). Therefore, the concept of a methodology recount genre appears to represent a logical starting point for exploring the generic structure of Methods in RCT reports. However, despite positioning their work within the "Sydney School" tradition, Nesi and Gardner (2012) do not seem to build on Martin and Rose's (2008) genre agnation and Martin's (1992, 1999) modelling of genre and register. Instead, their genre families tend to be organised around:

- the perceived similarity of assignments (e.g., assignments developing research skills);
- Swales' (1990, 2004) analysis of academic genres in the ESP tradition; and
- Biber's (1988) multidimensional analysis of linguistic features.

Accordingly, Nesi and Gardner's investigation of methodology recounts focuses on calculating frequencies of linguistic features, which can impose certain limitations when exploring genre-sensitive language use (see Chapter 1). Nevertheless, since RA Methods remain extremely underexplored in linguistic genre studies, it is now useful to review the relevant ESP research and outline its implications for an SFL-informed modelling of methodology recounts proposed in this thesis.[13]

Following Bloor's (1999) concept of **fast** and **slow** texts, Swales (2004) makes a distinction between **clipped** and **elaborated** Method sections. While clipped (i.e., fast) Methods are likely to assume a significant amount of background knowledge, those that are elaborated (i.e., slow) usually include a lot of background information. To help the analysts locate texts along the clipped↔elaborated continuum, Swales has created a scorecard that consists of nine feature oppositions (see Table 2.7).

Table 2.7: Variations in Methods sections: 'clipped' and 'elaborated' texts (adapted from Swales, 2004, p. 220).

Feature #	Clipped texts…	Elaborated texts…
(1)	assume background knowledge of the general methodology	recognize a need to provide background knowledge
(2)	avoid named subsections	frequently contain subsections
(3)	use acronyms and citations as shorthand for procedural descriptions	use descriptions rather than citations to indicate the various aspects of the methodology adopted

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[13] To my knowledge, Nesi and Gardner's (2012) study of methodology recounts is the only study on the generic structure of RA Methods that draws on SFL to some extent.

(4)	use a running series of verbs in a sentence (e.g., "…*collected, stained, and stored*")	tend to have one finite verb per clause
(5)	eschew definitions of terms and examples	provide definitions, examples, and illustrations as necessary
(6)	offer few *how* statements, such as *by* + verb-*ing*	contain a number of *how* statements
(7)	provide few justifications for methodological choices	include justifications and rationales for details of the procedures adopted, sometimes placed in the marked presubject position via a purpose clause
(8)	use very few "volitional" verbs; i.e.,, "we analyzed" rather than "we *decided* to analyze"	contain one or more of "volitional" verbs, such as "We *decided* to focus on…"
(9)	offer few reiterations of the subjects/objects of the research, but focus on the techniques used	tend to have a wide range of linking phrases (logical, temporal, and spatial) at the beginning of sentences

Table 2.7 indicates Swales' almost exclusive focus on forms and their frequencies (e.g., the number of *finite verbs* in (4) or *volitional verbs* in (8)). Even though the nine features on the scorecard imply a common-sense approach to observing variations in Method sections, its use as an analytical framework in a study that is functionally and/or pedagogically oriented appears to be problematic. For instance, the CONSORT Statement guidelines require that Methods include subheadings for easier navigation (Moher et al., 2010). This suggests that the use of *named subsections* in (2) is primarily motivated by disciplinary conventions on textual organisation, which may or may not be correlated with the amount of provided experiential content. Similarly, the same social function (e.g., *justification*) can be performed by more than one form (e.g., *purpose* clauses in (8) and *because* clauses, which usually accompany the *volitional verbs* in (9)). To illustrate the potential drawbacks of focusing on one of these forms, it is useful to consider Nesi and Gardner's (2012) study of methodology recounts. Adopting the eighth criterion, their investigation calculated the frequencies of the lemma *decide* across nine disciplines to conclude that linguists and chemists produce the most elaborated and clipped methodology recounts, respectively (linguistics: 2.1 Tokens per text; chemistry: 0 Tokens per text). Be that as it may, these findings are likely to be of limited value for novice researchers, especially because decision-making processes can also be implied through justification (see (2.7)).[14]

> (2.7) **Since** per protocol analyses were likely to be biased, we **included [=decided to include]** a complier average causal effect analysis at 12, 24, and 52 weeks.

Despite the aforementioned shortcomings of Swales' criteria, this thesis has found the concept of the clipped↔elaborated continuum to be a useful tool for a topological exploration of methodology recounts (see Chapter 4). In place of Swales' scorecard, however, the findings of

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[14] Unless stated otherwise, the examples included in this chapter are extracted from this study's dataset.

this study will be used to propose a set of SFL-based criteria, which should facilitate future function-oriented investigations into methodology recounts (see Chapter 4). To align with the existing SFL terminology, the clipped/elaborated continuum will be replaced with the **synoptic ↔ comprehensive cline**.

In addition to Swales' work, there are three other ESP studies of RA Methods that are of interest for this thesis: Nwogu's (1997) exploration of medical RAs, Kanoksilapatham's (2005) investigation of biochemistry RAs, and a cross-disciplinary RA study conducted by Cotos, Huffman and Link (2017).

Based on their observations of grammatical and lexical features, Nwogu (1997) and Kanoksilapatham (2005) have identified nearly identical sets of rhetorical moves involved in medical and biochemistry RA Methods (see Table 2.8).

Table 2.8: A comparative overview of the rhetorical moves identified in medical and biochemistry RA Methods (Kanoksilapatham, 2005; Nwogu, 1997).

Methods in medical RAs (Nwogu, 1997)	Methods in biochemistry RAs (Kanoksilapatham, 2005)
Move 4: Describing data collection procedure	Move 4: Describing materials (including how they were obtained)
Move 5: Describing experimental procedure	Move 5: Describing experimental procedures
	Move 6: Detailing equipment (used in experimental procedures)
Move 6: Describing statistical procedure	Move 7: Describing statistical procedures

Table 2.8 suggests that the identified rhetorical structures of both RA Methods unfold chronologically, while the move labels name the *procedures* that are characteristic of experimental research: *data collection*, *experimentation*, and *statistical analysis*. From the "Sydney School" point of view, such generic structure can be compared with that of a generic recount identified in history discourses (Martin & Rose, 2008; Martin & Wodak, 2003). In historical recounts, the timeline of events is established through an **episodic** unfolding of Record stages:

> The historical recount (…) can be episodically expanded (…) to scaffold the organisation of sections, chapters, books and multi-volume chronicles (…) When necessary of course, serially unfolding recounts can be included within these. (…) Episodic time reconstrues serial time as phases of activity; and once phased, these packages of time can be named (e.g., *waves of boatpeople*, *the actions of the Queensland government*). Events become things. And these 'things' can be used to preface or sum up events (…) [which is] intimately linked with the ways that events and agents are valued. (Martin & Rose, 2008, pp. 110–111)

Similarly, the moves identified by Nwogu and Kanoksilapatham can be observed as episodically organised methodology recounts comprising three Record stages (i.e., *data collection/experimental/statistical procedures* as the names for three *packages of time*). Like historians, RA writers also have the possibility of disclosing specific procedural steps through *serially unfolding recounts*. As will be shown in Chapter 4, the methodology recounts that

construe Methods in RCT reports also unfold episodically, with their structures being scaffolded through subsections that name RCT procedures (e.g., *Participant Selection*, *Interventions*). Moreover, the current study has identified several attitudinal stages that typically precede/succeed Record stages (see Sections 4.4 and 4.5), which can be usefully compared with Martin and Rose's remark on the *intimate link* between historical *events* and the ways in which they are *valued* (see the above quote).

Traditionally, RA Methods have been considered to be rhetorically simple, which may have contributed to the fact that they are the least investigated sections in ESP research (Swales, 2004). To be precise, methodology sections have often been perceived as "pure" records of the performed procedures devoid of any evaluative function. However, a recent cross-disciplinary study of 900 RAs has suggested that RA Methods play an important persuasive role: demonstrating rigour and credibility (Cotos et al., 2017). As a result, Cotos et al. have proposed the Demonstrating-Rigour-and-Credibility (DRaC) model for conducting a Swalesian move analysis of Methods (see Table 2.9).

Table 2.9: The Demonstrating-Rigour-and-Credibility (DRaC) model of Methods sections (adapted from Cotos et al., 2017, pp. 97–98).

DRaC move	Functional descriptors
Move 1: Contextualizing study methods	providing necessary background information (e.g., referencing previous works, identifying methodological approach, rationalizing pre-experiment decisions, etc.)
Move 2: Describing the study	specifying the experimental procedures prior to data analysis
Move 3: Establishing credibility	convincing the readership of the validity of data analysis procedures

In this thesis (see Chapter 4), ethics, scientific rigour, and credibility have been identified as the values that need to be demonstrated in an RCT methodology recount, which makes the DRaC concept appealing. From an SFL perspective, however, there are two problematic features of this theoretical model. To begin with, the social functions of *contextualizing*, *describing*, and *establishing credibility* seem to be restricted to certain parts of methodology. For example, *describing* is attached to *experimental procedures*, whereas *establishing credibility* is linked to *data analysis*. However, it remains unclear why the function of *describing* cannot be instantiated in a record of *data analysis* or why the writer cannot aim to *establish credibility* through a record of *experimental procedures*. Furthermore, Cotos et al. (2017) rely on sentences to identify moves and calculate their distribution, which means that the unit of analysis is not functional. For these reasons, the DRaC model is not used as a theoretical framework in the analysis of RCT Methods in this thesis. Nonetheless, inspired by the DRaC model as a set of values, the concept of demonstrating ethics, rigour, and credibility is employed to model attitudinally oriented stages.

2.2.3.3 Genres as configurations of register variables

Following Martin (1992, 1999), the "Sydney School" considers the register variables of field, tenor, and mode to be "resources for generalising across genres, from the differentiated perspectives of ideational, interpersonal, and textual meaning" (Martin & Rose, 2008, p. 16). In other words, register is perceived as an intermediary stratum that links linguistic choices to the enactments of social practices within a culture.

In Martin and Rose's (2008) topological model, field "is concerned with the discourse patterns that realise the activity that is going on" (p. 13). It is argued that a field comprises activity series aimed at achieving a particular goal within a given discourse community. Furthermore, each activity series involves taxonomically organised elements, including processes, people, things, places, and qualities. Accordingly, there are two field dimensions that account for the differences in discourse patterning with reference to ideational language resources:

(a) the extent to which a text is structured as an **activity** series (e.g., activity-oriented: *recounting, explaining*; item-oriented: *describing, classifying*); and

(b) whether a text deals with **specific** participants (e.g., *my holiday, my dog*) or **general** phenomena/classes (e.g., *evolution*, *crocodiles*) (see Fig. 2.30).
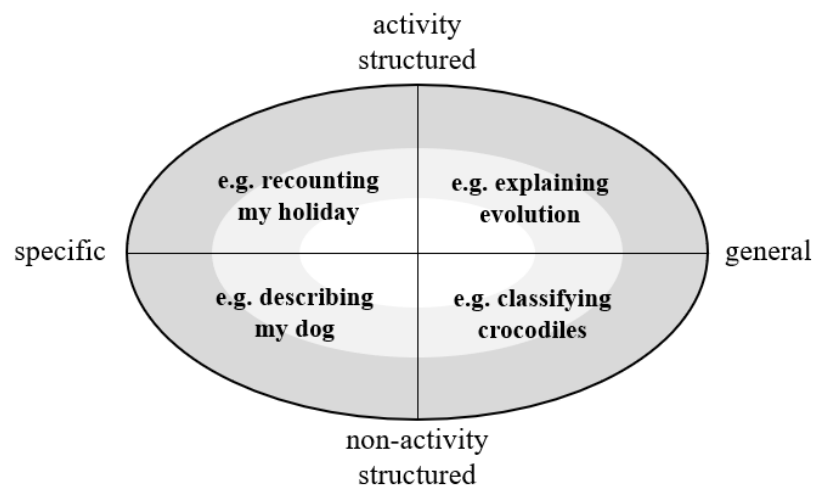
Figure 2.30: Dimensions of variation in field (adapted from Martin & Rose, 2008, p. 14).

When it comes to research warrants, Hood's (2010) series of descriptive texts on the object and field of study indicates a 'non-activity' discourse patterning that moves from the 'general' to the 'specific' end of the cline. As will be shown in Chapter 3, clinical psychology research warrants, which function as RCT report Introductions, exhibit a similar general → specific movement. In the RCT dataset, however, this tends to be accompanied by a 'non-activity → activity' shift; that is, RCT report writers often transition from reviewing a relevant body of research to sequencing the steps of the reported trial. As will be shown in Chapter 4, the specific

and activity-structured discourse patterning is then continued in the methodology recount functioning as RCT report Methods.

Another description of the field variable can be found in Martin's (1992) field classification, which is organised around the mode of transmission (see Fig. 2.31).
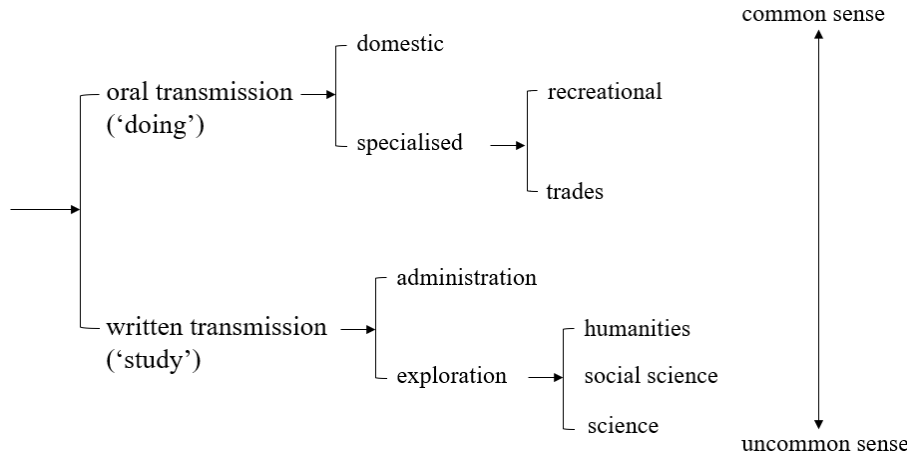
Figure 2.31: Martin's classification of fields (adapted from Martin, 1992, p. 544).

As indicated in Figure 2.31, **domestic** and **specialised** fields are typically learnt by *doing*, which usually requires 'oral transmission'. In contrast, **administration** and **exploration** fields revolve around activities that are oriented towards building social cohesion and knowledge, which normally involves 'written transmission'. Topologically, field classes can be observed with reference to the 'common ↔ uncommon sense' cline. As illustrated in Figure 2.31, exploration fields (i.e., 'humanities', 'social science', or 'science') are relatively uncommon sense, which indicates a high degree of technicality and abstraction.

Due to its importance for investigating technicality and abstraction in science, the field variable has been of particular interest to SFL research on knowledge building processes (Halliday & Martin, 1993; Hao, 2020a; Hood, 2010; Martin & Veel, 1998; Maton et al., 2021). Recently, this has led to the development of a more comprehensive field network (Doran & Martin, 2021). As shown in Figure 2.32, this field typology makes a distinction between **dynamic** and **static** field perspectives (cf. "activity structured" and "non-activity structured" fields in Martin & Rose, 2008).
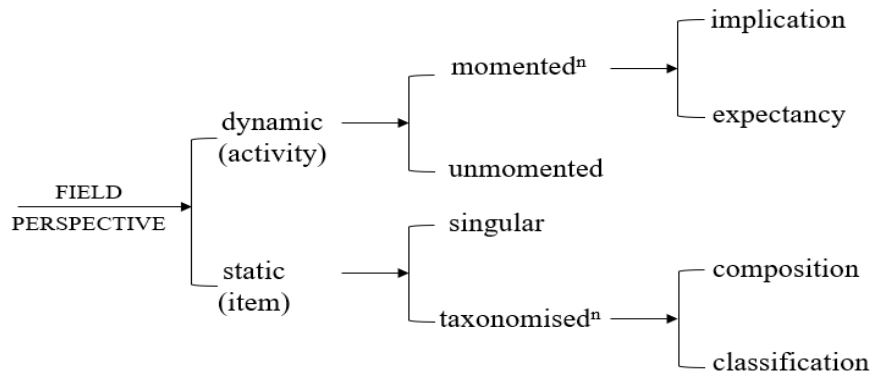
Figure 2.32: Field network: the subsystem of FIELD PERSPECTIVE (adapted from Doran & Martin, 2021).

A dynamic field perspective is concerned with **activities**, which can be **'momented'** through a series of smaller activities that unfold in terms of **'implication'** or **'expectancy'** (see Fig. 2.32). Implication series deal with the cause-effect relations characteristic of scientific explanations (e.g., *activities* leading to the onset of *depression*), while expectancy series focus on the temporal relations typical of scientific procedures (e.g., *activities* involved in conducting *an RCT*) (cf. Hao, 2020a). In contrast, a static field perspective deals with **items**, which can be organised through **'composition'** or **'classification'** taxonomies (e.g., *depression* → type → *psychological disorder*) (see Fig. 2.32). At the discourse semantic level, dynamic fields are by and large realised by occurrence figures linked via external CONNEXION; on the other hand, static fields are construed through entity co-elaboration (Hao, 2020a). These ideational language resources are further reviewed in Sections 2.3.1 and 2.3.2.1.

According to Doran and Martin (2021), both activities and items can be **'propertied'** in order to enrich dynamic and static construals of phenomena (see Fig. 2.33).

PROPERTY — propertied →
- PROPERTY TYPE
  - qualitative (e.g. *older population*; *randomly assigned*)
  - spatio-temporal (e.g. *global issue*; *metabolise rapidly*)
- ARRAY — arrayed →
  - (e.g. a *more efficient drug; metabolise faster*)
  - gauged (e.g. *5mg/ml allopregnanolone; follow for 12 weeks*)
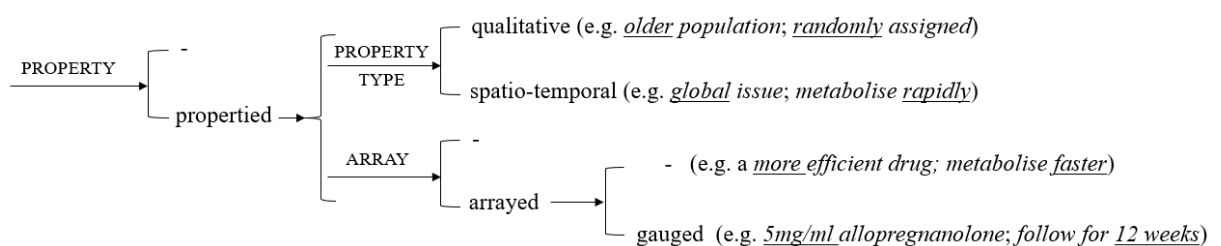
Figure 2.33: Field network: the subsystem of PROPERTY (adapted from Doran & Martin, 2021).

As exemplified in Figure 2.33, properties can be either **'qualitative'** (e.g., *older*, *randomly*) or **'spatio-temporal'** (e.g., *global, rapidly*). Being inherently gradable, both property types can be **'arrayed'** (e.g., *more efficient*; *faster*). More importantly, 'arrayed' properties can be **'gauged'**, which means they can be precisely measured or quantified (e.g., *5mg/ml*; *12 weeks*). When describing items, properties can also become criteria for organising taxonomies, which is of great significance to specialised discourses that rely on defining properties (e.g., in legal discourse, *adults/minors* may be defined as *persons older/younger than 18*). In the field of clinical psychology, for example, properties such as *depressed* and *anxious* are gauged to distinguish between people that are *mentally disordered* and those that are *mentally healthy*. Ideationally, properties are construed through qualities and place/time entities, allowing for a linguistic construction of precision in scientific discourses such as RCT reports (Hao, 2020a). When organising taxonomies, this thesis proposes that properties can also be observed through the concept of entity characterisation, which is reviewed in detail in Section 2.3.1.2. Interpersonally, properties represent valuable APPRAISAL resources (Martin & White, 2005), which are discussed further in Section 2.3.3.

In technical discourses such as science, Doran and Martin (2021) argue that field also represents a resource for **meaning reconstrual**, which "enables multiple overlapping perspectives on phenomena to be realized in a single instance." This thesis is particularly interested in the meaning reconstrual that involves **itemisation**, which refers to the process of "naming" activities and properties within a given field. In RCT reports, the field of study involves the itemised activity *randomised controlled trial (RCT)*, which allows the writer to use both dynamic and static field perspectives. To construe time-structured methodology recounts (see Chapter 4), *RCTs* can be momented through a series of smaller itemised activities:

> *participant selection*
> ^
> *randomisation and masking*
> ^
> *interventions*
> ^
> *outcome measurement*
> ^
> *statistical analysis*

At the same time, it is possible to taxonomize *RCTs* (*RCTs* → type → *medical research*) and/or assign them qualities (e.g., *RCTs* are *reliable*), which can be used to describe and review the field of study through descriptive and/or argumentative genres (see Chapter 3). Similarly, as this thesis focuses on the RCT trials of treatments for depressive and anxiety disorders, the object of study includes the following itemised properties:

- sets of features that are used to compare treatments (e.g., *efficacy*, *safety*, etc.); and
- psychological disorders (e.g., *depression*, *anxiety*, etc.).

Itemised properties can be arrayed (e.g., <u>*major*</u> *depression*) as well as taxonomized (*depression* → type → *psychological disorder*). At the level of discourse semantics, itemised activities are realised as activity entities, while itemised properties can be realised as characteristic entities or measured/perceived entity dimensions (cf. Hao, 2020a). As is the case with other experiential language resources, clinical psychology entity types are reviewed in Section 2.3.1.

As far as variation in tenor is concerned, Martin and Rose (2008) propose a topological model in which the nature of social relationships can be observed through two complementary dimensions: **status** and **solidarity**. As illustrated in Figure 2.34, the status between those involved in communication can be relatively **'equal'** (e.g., between *siblings*) or **'unequal'** (e.g., between *a junior worker* and *a senior manager*). In addition, solidarity refers to the social distance between the interlocutors, which can be relatively **'close'** (e.g., between *siblings*) or **'distant'** (e.g., between *co-workers*).
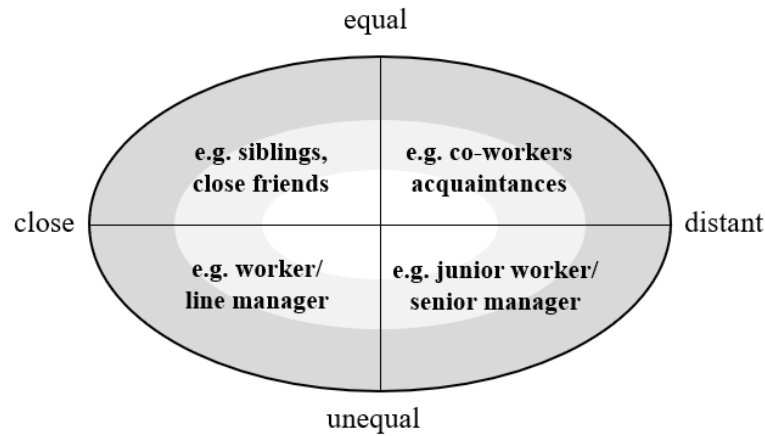
Figure 2.34: Dimensions of variation in tenor (adapted from Martin & Rose, 2008, p. 13).

To some degree, the relationship between the RCT report writer and reader can be described as equal and distant. Throughout an RCT report, however, **solidarity** can be construed by using interpersonal language resources to rally around the shared values of the medical scientific community (cf. Martin & White, 2005). Given that RCTs represent the "gold standard" in assessing experimental treatments, it is essential that RCT reports provide justification of the trial and demonstrate its ethics, scientific rigour, and credibility (Moher et al., 2010). Simultaneously, RCT reports need to maintain a high level of scientific objectivity, which often requires an effective use of implicit persuasion strategies (cf. Hood & Martin, 2005; Humphrey & Hao, 2013). The language resources for explicit and implicit evaluation and their interaction with ideational resources are reviewed in detail in Section 2.3.3.

Lastly, Martin and Rose's (2008) topological model of mode is concerned with the texture of information flow with reference to two clines: (a) **language in action** (i.e., accompanying field) ↔ **language as reflection** (i.e., constituting field); and (b) **dialogue ↔ monologue** (see Fig. 2.35).
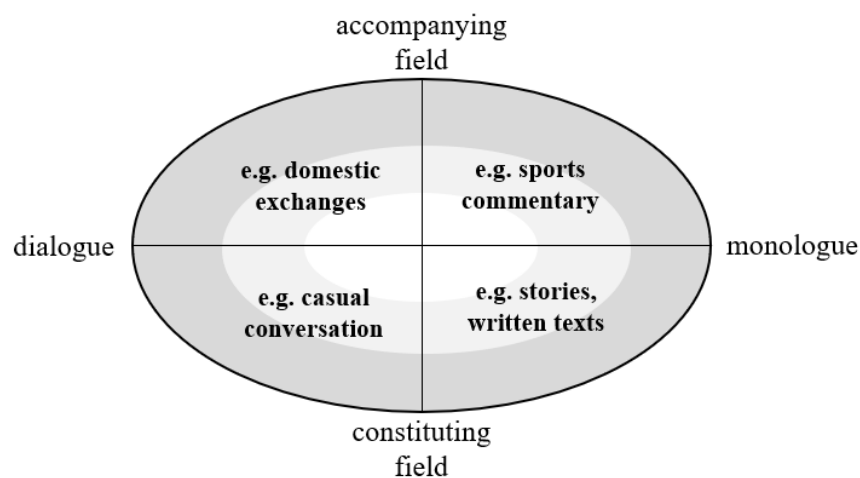
Figure 2.35: Dimensions of variation in mode (adapted from Martin & Rose, 2008, p. 15).

As indicated in Figure 2.35, the 'action ↔ reflection' cline refers to "the amount of work language is doing in relation to what is going on" (Martin & Rose, 2008, p. 15). In other words, textual organisation varies in the degree to which a text 'accompanies' or 'constitutes' field. During a tennis match, for instance, *sports commentary* accompanies "what is going on" on the tennis court. When using language in action, as in sports commentary, the information flow tends to be **context-dependent**, which does not allow any significant pre-planning of textual organisation. In *written texts*, however, academics use language as reflection to build their disciplinary fields through abstraction and/or generalisation of phenomena. Therefore, these texts are relatively **context-independent** and usually involve careful planning of the information flow. In both cases, texts can be positioned along the 'dialogue ↔ monologue' cline, a complementary dimension of mode variation (see Fig. 2.35). This continuum refers to the extent to which different modalities (e.g., speech, writing, television, Zoom, etc.) allow aural and/or visual feedback (either immediate or delayed). To illustrate, dialogic *casual conversations* have a relatively high feedback potential because the interlocutors can hear and see each other, whereas a monologic *sports commentary* is unlikely to receive a response from a TV viewer.

As written scientific texts, the RCT report Introductions and Methods analysed in this thesis are oriented towards building knowledge in the field of clinical psychology (i.e., 'constituting field'; 'monologic'). Thus, the information flow tends to be multilayered and predominantly scaffolded through sections and sub-sections. Compared to Methods, however, it can be argued that Introductions represent more 'reflective' texts in the construction of the scientific base for a new contribution (see Chapters 3 and 4). Furthermore, Introductions seem to inch slightly toward 'language in action' towards the end (see Chapter 3). At the discourse semantic stratum, the more a text 'constitutes field', the more it relies on internal CONNEXION and a hierarchy of periodicity to organise information effectively (Martin & Rose, 2007). These logical and textual resources are reviewed in Sections 2.3.2.2 and 2.3.4, respectively.

2.2.4 Tackling a "big" text: methodological issues and proposed solutions

With the emergence of the "Sydney School" interest in higher education genres, researchers started exploring longer pieces of writing, including student assignments and scholarly publications (Dreyfus et al., 2015; Hao, 2015; Hood, 2010; Humphrey & Dreyfus, 2012; Humphrey & Hao, 2013; Nesi & Gardner, 2012; Szenes, 2017). To segment a "big" text into smaller chunks of meaning (cf. "big texts" in Szenes, 2017), this line of enquiry has employed the concepts of *macrogenre* and *staging/phasing*. These concepts have proven to be useful tools in scaffolding literacy, especially in tertiary contexts; however, the use of SFL metalanguage in descriptions of *macrogenres* and *genre-stage-phase* relations has been somewhat

inconsistent and/or vague. Therefore, the following sections include a critical review of these terms and provide clarification as to how they are used in this thesis.

2.2.4.1 Genres and macrogenres

In their seminal work on genre agnation, Martin and Rose (2008) note that most genres "would occupy half a page to a page…(although technical notes and research articles tend to be a bit longer)" (p. 218). It is argued, however, that texts can "grow bigger than a page" through **complexing** and/or **embedding** (Martin, 1994, 1995, 2001; Szenes, 2017).

To create "larger" texts, writers have the option of combining "short" genres into genre complexes called **macrogenres** (Martin, 1994, 2001). According to Martin and Rose (2008), macrogenres represent serial (i.e., univariate) structures that can expand through logico-semantic relations of **elaboration** (text 1 = text 2…), **extension** (text 1 + text 2…), and/or **enhancement** (text 1 **x** text 2…) (following Halliday, 1985). For instance, Figure 2.36 shows an analysis of the macrogeneric structure found in *Part 2* of a secondary school geography textbook *Australian journey: environments and communities*.
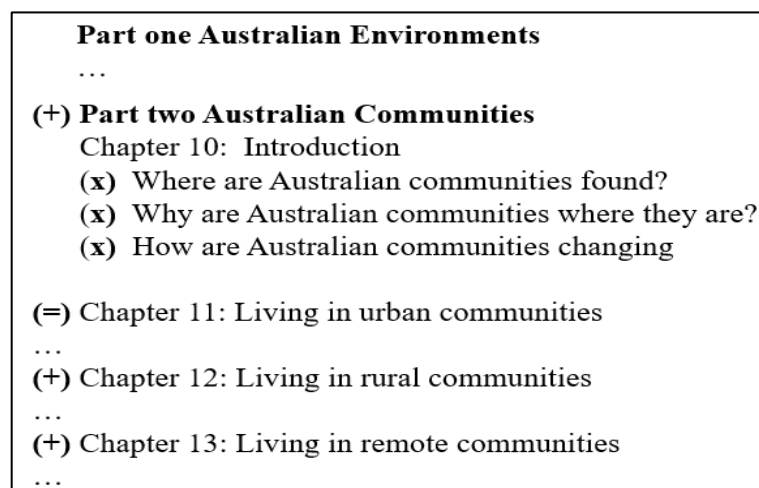
Figure 2.36: Serial structure of a macrogenre: the 'Australian journey' textbook (adapted from Martin & Rose, 2008, p. 220).

As illustrated in Figure 2.36, chapters/sections constitute an open series of "short" texts, which can be continued by introducing new chapters or sections. Furthermore, each chapter/section has its own structure, which can be generic (e.g., descriptive report, explanation, etc.) or macro-generic (i.e., another genre complex). Importantly, these texts do not function as textbook stages because univariate structures such as textbooks do not construe part-whole relations (see Section 2.1.2).

To expand the meaning potential of a multivariate text structure, writers can employ **genre embedding** (Martin, 1995). In this case, a bounded structure of one genre is augmented by embedding genres as one or more of its stages. For example, Szenes' (2017) study has found relatively long undergraduate business reports (3,000-3,500 words) to be realised by discussion

genres, with a number of embedded genres aimed at "deepening" a student's line of argumentation. In other words, the global structure of a business report involves a prototypical discussion stage configuration (Issue ^ Perspectives ^ Resolution), but with individual stages also realised by genres. To illustrate, Figure 2.37 shows multiple layers of genre embedding found in Szenes' analysis of Perspective 2 in the discussion titled *China business report*.
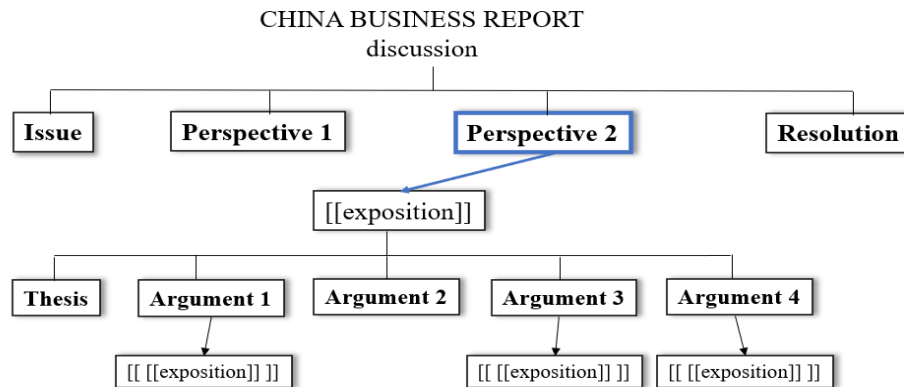
Figure 2.37: Genre embedding in an undergraduate business report: Perspective 2 stage in the 'China business report' (adapted from Szenes, 2017, p. 169).

As shown above, Perspective 2 is construed by an embedded exposition, comprising a Thesis and four Argument stages. Furthermore, three argumentative stages (Argument 1, 3 and 4) are realised by second-order embedded expositions. Notably, all the embedded genres function as parts of the overall discussion structure, which is bounded by its stage configuration (Issue ^ Perspective 1 ^ Perspective 2 ^ Resolution).

Although texts can expand in two different ways (complexing and/or embedding), the term *macrogenre* has often been used to refer to any "big" text with a multi-generic structure. Arguably, this has led to the inconsistent use of SFL metalanguage in RA genre studies. In Martin and Rose (2008), the RA *genre* is defined as a procedural recount with the following stage configuration: Introduction ^ Methods ^ Results ^ Discussion. In Rose and Martin (2012), however, research articles are considered to be *macrogenres* that combine "reports, explanations, procedures, and related genres" (p. 103). Furthermore, Hood (2010) posits that writers construe RA Introductions with a research warrant *macrogenre*, which involves a *series* of predominantly descriptive *genres*. Drawing from Hood (2010), Humphrey and Hao (2013) then suggest that research warrants contain recontextualised descriptive *genres* as *stages*. Therefore, research articles have been defined as both *genres* and *macrogenres*. In addition, the existing descriptions on the research warrant *macrogenre* contain terminology that is characteristic of univariate (*series of genres*) as well as multivariate (*stage*) structures. To facilitate further application of the "Sydney School" genre pedagogy to the exploration of "big" texts such as RAs, there should be a clearer distinction between *genres* and *macrogenres*. Due to the inherent subjectivity of descriptors such as *big* or *long*, text size does not seem to be a

suitable parameter. On the other hand, the *univariate-multivariate* dichotomy can provide analysts with a clearly-defined criterion and offer valuable insights into how the analysed text "grows bigger" than a page (Martin, 1995; Szenes, 2017).

Following Szenes (2017), this thesis defines *genre* and *macrogenre* as follows:

- **genre** is a multivariate structure that consists of a closed set of functional stages; to expand the meaning potential of a genre, individual stages can be realised by embedded genres and/or macrogenres; and

- **macrogenre** is a univariate structure that consists of an open series of genres that expands through the logico-semantic relations of elaboration, extension, and/or enhancement.

Accordingly, both research articles (including RCT reports) and research warrants are considered to be genres, which can "grow bigger than a page" through genre embedding. As will be shown in Chapters 3 and 4, RCT report writers use research warrants and methodology recounts to construe Introduction and Methods stages, which enables them to justify their trial and demonstrate the ethics, scientific rigour, and credibility of its methodology (see Fig. 2. 38).
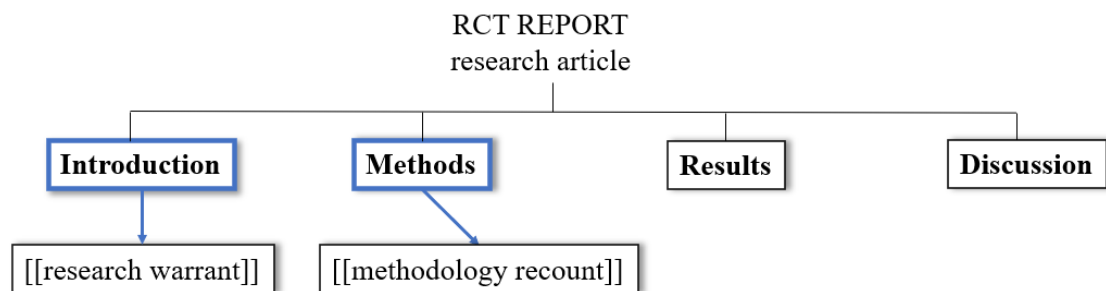
Figure 2.38: Genre embedding: locating research warrants and methodology recounts in the global structure of an RCT report.

As shown in Figure 2.38, this study employs a particulate (i.e., **tree diagram**) structure to express RA staging, which is commonly associated with experiential language meanings (see Section 2.1.2). Nevertheless, this does not mean that this thesis limits the interpretation of generic structure to the field variable or the concept of constituency. Instead, the experiential analogy is primarily used to illustrate genre embedding because "it does provide, especially in writing, an important perspective on the way in which a small text might expand" (Martin, 1995, pp. 23–24). In addition, generic structuring of research warrants and methodology recounts is examined with reference to interpersonal as well as textual meanings. Interpersonally, the thesis focuses on the evaluative prosodies used to justify a trial and demonstrate its scientificity. Textually, it deals with the waves of information prominence culminating in a linguistic construction of a strong foundation for the writer's contributions.

2.2.4.2 Genre, stage, and phase

The previous sections have shown that, in addition to naming a context stratum, **genre** refers to a unit that is the entry condition for genre system networks. On the paradigmatic axis, writers/speakers use language to enact a variety of social practices by selecting from a range of genre options (e.g., genres in science). On the syntagmatic axis, each option is realised through a highly predictable stage configuration (e.g., 'descriptive report' ↘ Classification ^ Description). In addition to *genre* and *stage*, the "Sydney School" has introduced the notion of *phase* to label relatively variable and potentially text-specific stage segments (Martin & Rose, 2008; Rose, 2006). Unlike stages, phases are typically modelled at the level of discourse semantics, which has proven to be of great benefit to making generic features more visible in literacy programs (e.g. Dreyfus et al., 2015; Humphrey & Dreyfus, 2012; Rose & Martin, 2012). Nonetheless, the existing interpretations of generic structure have mainly focused on stages and phases as "text segments", without clearly specifying the nature of the realisational dialectic that exists between these concepts. The clarification of the genre-stage-phase relations is essential to account for the phenomenon of genre embedding.

To a considerable extent, a segmental view on "Sydney School" genres has been influenced by the notion of **a discourse semantic rank scale**:

> **Phases** can be defined broadly as waves of information carrying pulses of field and tenor**.** Phases are intermediate in scale between **stages** (…), as highly predictable segments in each *genre*, and **messages** that are defined from the perspective of *grammar* (…) These layers of structure comprise a rank scale in the *discourse semantic* stratum (Rose, 2006, p. 187, emphasis added).

Despite its label, however, Rose's *genre-stage-phase-message* hierarchy does not appear to provide an intra-stratal organisation of class-function cycles, which is characteristic of rank scales (following Martin, 2013; see also Section 2.1.4). Instead, the *phase* segment is positioned between two *layers of* text *structure* that are *defined* at different levels of abstraction: generic *stage* and discourse semantic *message*.[15] Consequently, the following questions are likely to arise in a genre study that involves rank-shift and phasing:

- Do generic stages refer to functional categories or discourse semantic units?
- At the genre stratum, which generic unit becomes supplanted by an embedded genre?
- At the discourse semantic stratum, do phases refer to functional categories, discourse semantic units, or something else?
- What is the relation between phases and the units positioned at the genre stratum?

At the genre stratum, the concept of embedding appears to be quite revealing in terms of class-function relations. To reiterate, rank-shift (i.e., embedding) refers to the situation in

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[15] In Martin's (1992) modelling of ideational discourse semantics, a message represents a basic unit in activity sequences (see Section 2.3.1).

which a unit of one rank functions as a part of another unit of its own rank or of a rank below (Martin, 2013). In lexicogrammar, for example, an embedded clause can function as Qualifier within a nominal group (see Section 2.1.4). Likewise, an embedded genre can function as a stage of another genre, which implies that genres and stages refer to units and functions, respectively.[16] This also means that an embedded genre cannot replace a stage, just as an embedded clause cannot replace a functional category such as Qualifier. Nevertheless, it remains unclear which generic unit occupies a stage if there is no genre embedding. In an attempt to resolve the issue, this thesis proposes a **generic rank scale** that comprises two unit ranks: **genre** and **component**. Placed at the same level of abstraction as genres, component agnation can also be expressed through registerial patterns (see Chapters 3 and 4). Using the "genre-clause" analogy, the relation between a genre and a generic component can be compared to the one between a clause and a word group/phrase. In other words, the meaning potential of a genre can be expanded by supplanting a component with an embedded genre, just as the meaning potential of a clause can be augmented by replacing a word group/phrase with an embedded clause.

As already mentioned, "Sydney School" literacy support programs have often used the concept of phase to draw attention to the important discourse semantic patterns within stages.[17] In Martin and Rose's (2007) modelling of discourse semantics, phases are labelled notionally, with lower case and between single quotation marks (e.g., 'falling in love'). For example, Table 2.10 shows Martin and Rose's phasal analysis of the first Incident stage of *Helena's story*, an instantiation of a story genre identified in their work.

Table 2.10: Martin and Rose's approach to phasal analysis: the first Incident stage of 'Helen's story' (adapted from Martin & Rose, 2007, p. 9)

Incident 1	Text (Helen's story)
'falling in love'	As an eighteen-year old, I met a young man…
'operations'	Then one day he said he was going on a 'trip'.
'repercussions'	More than a year ago, I met my first love again…

In their descriptions of story genres, however, Martin and Rose (2008) focus on common phase types with reference to their role in engaging the reader/listener: *setting*, *description*, *events*, *effect*, *reaction*, *problem*, *solution*, *comment*, and *reflection*. Conventionally, these phase labels are written using lower case, without any quotation marks. Inspired by Halliday's (1985) logico-semantic relations of expansion and projection, story phase options have been formalised as a system network (see Fig 2.39).

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[16] Conventionally, the "function" status of stages is also reflected in the use of capitalisation (e.g., Issue).

[17] In SFL, another influential approach to phasal analysis can be found in Gregory and Malcolm (1981), who define phase as a stretch of "text where there is a significant measure of consistency in what is being selected ideationally, interpersonally and textually" (p. 8).
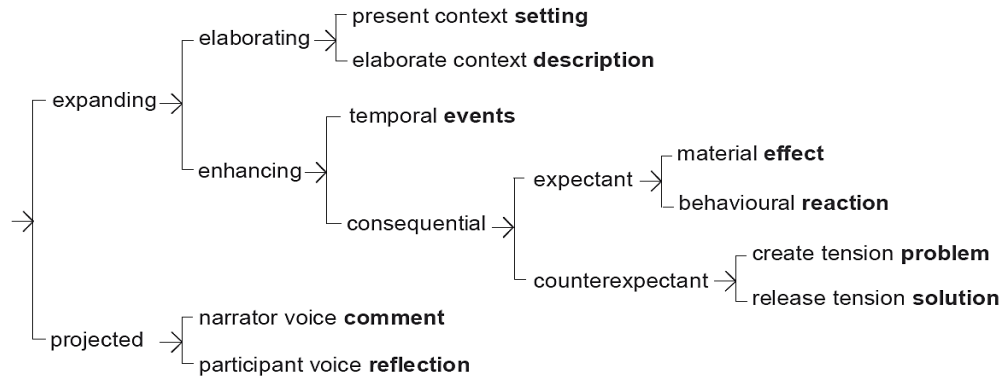
Figure 2.39: Common options in story phases (taken from Rose, 2006, p. 197).

In either case, Martin and Rose frequently refer to phases as "waves of information", which appears to prioritise textual discourse meanings.

When it comes to research on genres in higher education, Humphrey and Dreyfus (2012) employ the concept of phases in their analysis of the Results/Discussion stages in postgraduate linguistics interpretation essays. In this study, the 'point' phase is discussed with reference to the register variables and the ideational, interpersonal, and textual meanings that "contribute to making an effective point." Furthermore, 'points' are referred to as "more delicate structural units (…) [,which] have proved very useful to students in creating well-structured interpretations" (2012, p. 163). Conventionally, the 'point' phase is marked with single quotation marks, which is similar to Martin and Rose's (2007) notional labelling of phases.

In this thesis, **phase labels** are used to name the distinct combinations of ideational, interpersonal, and textual discourse semantic features that are of importance for construing a sound scientific base for medical knowledge extension. Therefore, phases are observed as language strategies (e.g., *definition* or *steps*), which is comparable to Humphrey and Dreyfus' (2012) modelling of the 'point' phase. Conventionally, they are marked with lower case italics (see, e.g., Table 2.11) because this thesis uses single quotes for in-text references to systemic features (see Section 2.1.3).

Table 2.11: Descriptive phases in the descriptive report functioning as Topic significance stage of BMJ-1's research warrant.

Staging (descriptive report)	Text (body dysmorphic disorder)
Classification *definition (disorder)*	Body dysmorphic disorder (BDD) is a psychiatric disorder characterised by preoccupation with perceived defects…
Description *effects* *prevalence* *treatment*	BDD is associated with functional impairment…. Its prevalence ranges from 0.7% to 2.2% in the general population. It is common for those with BDD to seek dermatological treatment…

In line with the "Sydney School" tradition, the main motivation behind the inclusion of a phasal analysis in this thesis is to facilitate the application of the empirical findings in future genre-

based literacy interventions. Accordingly, the pedagogical implications of this study will be outlined in Chapter 5.

In conclusion, this study uses two units of analysis – genre and component – to investigate the generic structuring of RCT report Introductions and Methods. A generic rank scale has been introduced to account for the situations in which a stage may or may not be realised by an embedded genre. Following Martin (2013), this scale is based on a class-function cycle:

- at the higher rank, a genre is represented through its stage configuration (e.g., 'descriptive report' ↘ Classification ^ Description); and
- at the lower rank, generic components function as stages; alternatively, a component can be supplanted by an embedded genre to expand the meaning potential of the overall generic structure (see Chapters 3 and 4).

With future pedagogical interventions in mind, this study also builds on the concept of phase to name language strategies that combine ideational, interpersonal, and textual discourse semantic resources (cf. Humphrey & Dreyfus, 2012). Specifically, it is argued that phase labels can facilitate a multi-functional interpretation of generic patterns at a lower level of abstraction – namely, discourse semantics. Furthermore, the registerial variables of field, tenor, and mode are used to link the identified language strategies to the enactments of social practices aimed at justifying a trial and demonstrating the scientificity of its methodology.

As a summary, Figure 2.40 illustrates this study's approach to text structure with reference to stratification, metafunction, and rank.
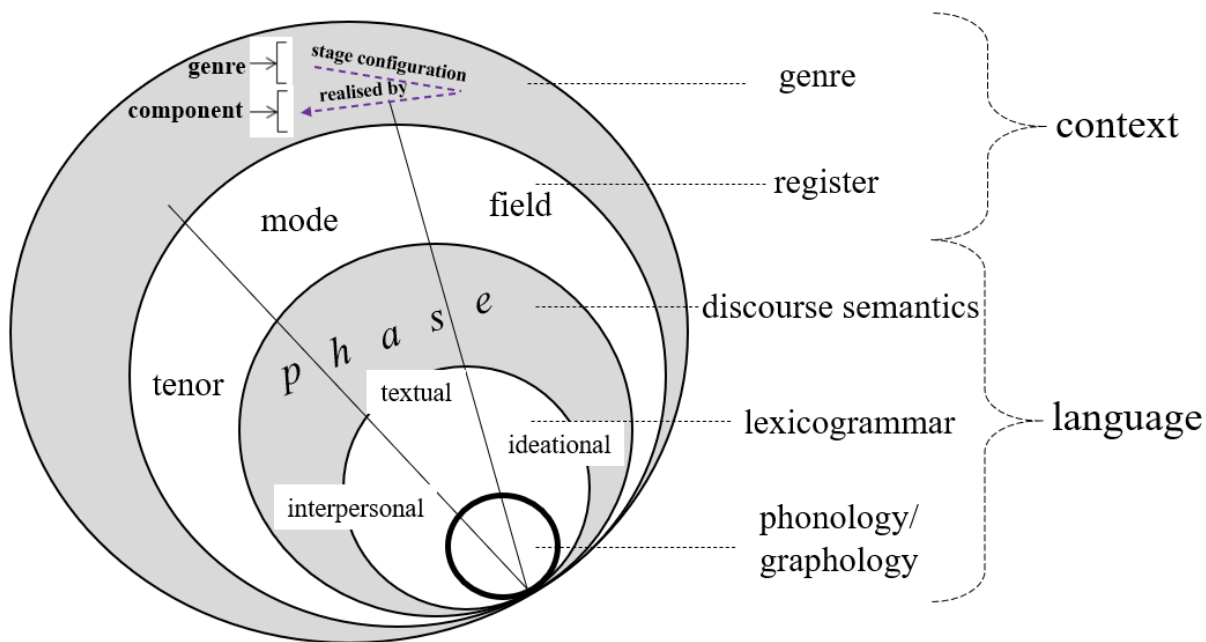
Figure 2.40: Approaching text structure in RCT reports: the semiotic dimensions of stratification, metafunction, and rank.

2.3 A systemic functional approach to discourse semantics

In Martin's (1992) model of language in context, discourse semantics deals with meaning-making resources that operate at the level of discourse, which makes them **co-textual**. Co-textual relations are also referred to as **covariate** relations, which stand in opposition to lexicogrammatical patterns of meaning, which are constructed at the level of clause (Halliday & Matthiessen, 2014). Discourse semantic resources are divided into systems across the three metafunctions, representing the expression planes for the three register variables:

- field is built by ideational discourse semantic systems, including IDEATION and (external) CONNEXION (Hao, 2015, 2020a; Martin, 1992; Martin & Rose, 2007);[18]

- tenor is enacted through interpersonal discourse semantic systems, including NEGOTIATION (Martin, 1992; Martin & Rose, 2007; Ventola, 1987) and APPRAISAL (Hood, 2010; Hood & Martin, 2005; Martin & Rose, 2007; Martin & White, 2005; White, 2003); and

- mode is composed through textual discourse semantic systems, including IDENTIFICATION, PERIODICITY, and (internal) CONNEXION (Martin, 1992; Martin & Rose, 2007).

The following sub-sections provide a detailed review of the systems that are of significance for this thesis: IDEATION, CONNEXION, APPRAISAL, and PERIODICITY.

2.3.1 IDEATION

IDEATION is concerned with "semantic relations between the particular people, things, processes, places and qualities that build the field of a text (…), within and beyond the clause" (Martin & Rose, 2007, p. 75). Accordingly, the IDEATION system comprises three sets of covariate relations: **taxonomic relations**, **nuclear relations**, and **activity sequence**.
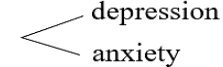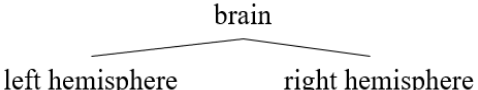
As a text unfolds, language users construct taxonomies of "people, things, and places" within a given field (Martin, 1992; Martin & Rose, 2007). At the level of discourse semantics, Martin (1992) refers to the units that realise people/things/places as **entities** and labels the relations they form as **taxonomic relations**. Entities typically enter two kinds of taxonomic relations: **classification** and **composition**. Visually, classification and composition taxonomies can be represented using tree diagrams that are read left-to-right and top-to-bottom, respectively (see Table 2.12).[19]

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[18] In Martin (1992) and Martin and Rose (2007), ideational meanings are modelled through IDEATION and CONJUNCTION. This thesis has adopted Hao's (2015, 2020) term *connexion* to differentiate between CONNEXION as a discourse semantic system and Halliday and Matthiessen's (2014) lexicogrammatical system of CONJUNCTION.

[19] Note that, unlike system networks, classification taxonomies do not contain square brackets and arrows.

Table 2.12: Classification and composition taxonomies: visual representation (following Martin & Rose, 2007).

Taxonomic relation	classification*	composition
Visual representation	mental disorder ⟨ depression / anxiety	brain / left hemisphere right hemisphere

*The presented taxonomy is non-exhaustive.

As shown in Table 2.12, classification deals with 'class-member' and 'co-class' relations, including hyponymy, co-hyponymy, and hypernymy. For instance, *depression* is a co-hyponym of *anxiety*, and both *depression* and *anxiety* are hyponyms of *mental disorder*. On the other hand, composition is concerned with 'part-whole' and 'co-part' relations (i.e., meronymy). In Table 2.12, the *left hemisphere* and the *right hemisphere* are parts of the *brain*.

Depending on a type of discourse, Martin and Rose (2007, pp. 113–114) also distinguish between different classes of entities that construe taxonomies. A broad distinction is made between **concrete**, **abstract**, and **metaphoric** entities. In everyday and specialised fields, concrete entities (e.g., *house*, *gearbox*, etc.) are learnt by "pointing to them or using them". In technical and institutional fields, however, abstract entities need to be linguistically defined because they refer to abstract concepts (e.g., *gene* in biology; *offence* in law). Other subtypes of abstract entities include those that are 'semiotic' (i.e., language features such as *question* or *statement*) or 'generic' (i.e., non-specific concepts such as *time or colour*). Lastly, metaphoric entities are derived from ideational metaphors, originating from processes (e.g., *exposure*) or qualities (e.g., *truth*).

According to Martin and Rose (2007), each clause construes experience as a configuration of **entities**, **qualities**, and **processes**. As these elements can differ in terms of their centrality to the unfolding of the process, the relations within the clause are modelled as **nuclear relations.** Building on Halliday's (1994; 2004) ergative TRANSITIVITY model and logico-semantic relationships, this set of IDEATION relations recognises four degrees of nuclearity: **centre**, **nucleus**, **margin**, and **periphery**.[20]

The centre of a clause (i.e., **figure**) is occupied by the Process (e.g., *give, recruit*). Additionally, the centre may include three kinds of **Range** – namely **process**, **class**, and **part**.[21] Range: process **elaborates** the type of a process (e.g., *play = tennis*), while Range: class/part relies on relational processes to **elaborate** an entity in terms of class/part (e.g., *be = Australian, have = blond hair*).

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[20] For a comprehensive overview of ergative functions across lexicogrammatical processes, see Halliday and Matthiessen (2014, p. 344).

[21] Note that capitalised labels (e.g., Process or Range) denote lexicogrammatical functions in the ergativity model.

Extending ('+') the centre, the nucleus includes **Medium**, which is the core participant without which a process cannot unfold. In (2.8-2.10), the Process is in **bold** and the Medium is underlined.

(2.8) We **recruited** <u>participants</u> from general practices.

(2.9) Only the clinic pharmacist **was given** <u>a copy of the schedule</u>.

(2.10) <u>A gap between supply and demand</u> **is likely to increase**.

In addition, the nucleus may include a **Range: entity**, which refers to the participant not affected by the process (<u>underlined</u> in (2.11)):

(2.11) <u>All questions</u> **were answered** within 36 hours.

Similarly, the nucleus may include a **Range: quality** or a **Range: possession**, relying on relational processes to extend an entity (e.g., *be + debilitating*; *have + a new email*).

Further **extending** and **enhancing ('+x')** the structure, the margin can include an **Agent** and/or **Beneficiary**. In effective clauses, the Agent entity (e.g., *We* in (2.8)) instigates the process that affects the Medium (e.g., *participants* in (2.8)). These effective processes can sometimes be extended to the Beneficiary entity (e.g., *the clinic pharmacist* in (2.9)). Both Agent and Beneficiary are considered relatively marginal because they can be omitted and/or implied in passive constructions (e.g., *by us* in (2.12) and *to us* in (2.13)).

(2.12) Participants were recruited (by us) by means of advertisements.

(2.13) All participants provided written informed consent (to us).

Finally, the clause structure can be additionally **enhanced ('x')** by **Circumstances**, which are located in the periphery of the clause (e.g., *from general practices* in (2.8); *within 36 hours* in (2.11)). To summarise, Figure 2.41 provides an illustration of the four degrees of nuclearity reviewed above.
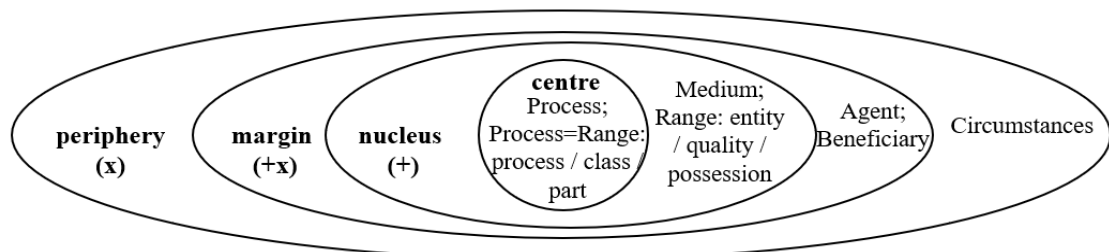
Figure 2.41: Nuclearity in the clause (cf. Martin, 1992, p. 319; cf. Martin & Rose, 2007, p. 95).

Following Halliday (1994; 2004), Martin and Rose also describe nuclear relations that are internal to word groups (Martin, 1992; Martin & Rose, 2007). For a study on scientific discourse, the nominal group structure is of particular relevance. In nominal groups, the central function is called the **Thing** (e.g., *disorder*), which may be sub-classified by one or more **Classifiers** (e.g., <u>*mental health*</u> *disorder*). As Classifier and Thing form a single entity, they are

linked in terms of **elaboration** (e.g., *mental health = disorder*). Moreover, Thing can be elaborated through a variety of *of*-phrases functioning as **Focus**, including facets (e.g., *an important aspect of = the disorder*), measures (e.g., *severity of = the disorder*), or types (e.g., *a kind of = disorder*). In the nucleus, the entity can be **extended** by adding qualities that function as **Epithets** (e.g., *debilitating + mental health disorder*). In the periphery, the entity can be **enhanced** by embedding prepositional phrases or clauses as **Qualifiers** (e.g., *a disorder* x *[[that affects millions of people]]*). The three degrees of nuclearity in nominal groups are illustrated in Figure 2.42.
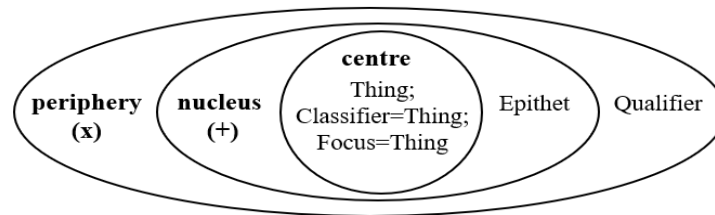
Figure 2.42: Nuclearity in nominal groups (cf. Martin & Rose, 2007, p. 98).

The last set of IDEATION relations – **activity sequences** – deals with how **messages** are linked as the texts unfolds (Martin & Rose, 2007). In Martin's model, message "is realised as a ranking clause that is neither a projection nor a hypotactically dependent elaborating clause" (1992, p. 235). In other words, clauses that represent locutions/ideas (underlined in (2.14)) and those that are traditionally referred to as relative clauses (non-defining in (2.15); defining in (2.16)) are treated as **message parts**.

(2.14) We hypothesized that massed therapy would result in lower symptom severity.

(2.15) Six trials, in which the number of participants ranged from 10 to 100, showed moderate to large effects of prazosin.

(2.16) Weak, direct current is applied through electrodes [[that are placed on the scalp]].

As the nature of sequences depends on the realisation of CONNEXION features, sequential relations are further explored in Section 2.3.2.

In conclusion, the covariate relations comprising the IDEATION system are concerned with the resources that construe field co-textually, which positions them at a higher level of abstraction than lexicogrammatical meaning patterns. Be that as it may, Martin and Rose's identification and labelling of ideational resources rely heavily on units that belong to field and/or lexicogrammar. As Hao (2020a) notes, there seems to be a one-to-one relationship between the entity types forming taxonomies and Martin's (1992) typology of domestic, specialised, administration and exploration fields (see Section 2.2.3.3). In addition, nuclear and sequential relations are only described in terms of lexicogrammatical configurations. That is, they are not described as discourse semantic patterns that are realised by lexicogrammatical patterns.

According to Hao (2020a), the absence of a distinct model of discourse semantic resources poses significant challenges when investigating inter-stratal tension, which underpins the construction of reasoning and technicality in scientific discourse.[22] In response, Hao has extended Martin and Rose's model through her tri-stratal description of **entities**, **figures**, and **sequences** in undergraduate biology experiment reports (Hao, 2015, 2020a). Hao's tri-stratal modelling of ideational resources can be applied to scientific discourses other than biology because her description "first and foremost makes visible the principles based on which discourse patterns can be identified" (Hao, 2020a, p. 7). Thus, the following section discusses an SFL-based view on technicality, abstraction, and ideational metaphor in scientific discourse, which is followed by a tri-stratal approach to entities and figures in clinical psychology RCT reports.[23]

2.3.1.1 Technicality, abstraction, and ideational metaphor: towards a multi-stratal perspective on scientific discourse

Due to the importance of nominalisation for the evolution of scientific language, the concepts of **ideational metaphor**, **technicality**, and **abstraction** have attracted a considerable amount of attention within the SFL community (see, e.g., Halliday, 2004; Halliday & Martin, 1993; Martin & Veel, 1998).

As already mentioned, **grammatical metaphor** denotes a kind of inter-stratal tension. In Halliday's words, it represents "a realignment between a pair of strata: a remapping of the semantics on to the lexicogrammar" (Halliday, 1998, p. 192). As a subtype of grammatical metaphor, the concept of **ideational metaphor** is concerned with the realisations of ideational resources that deviate from those that are considered typical or congruent (see Fig. 2.43).
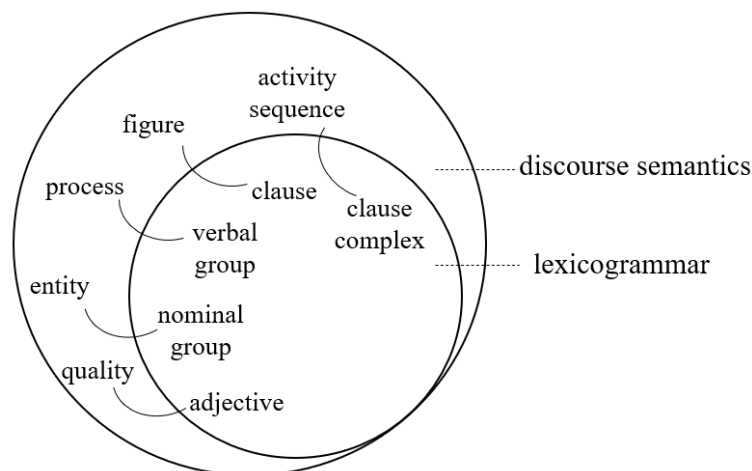
Figure 2.43: Congruent realisations of discourse semantic units (cf. Rose & Martin, 2012, p. 118).

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[22] For a detailed discussion on the strengths and weaknesses of Martin and Rose's (2007) modelling of ideational meanings, see Hao (2020a, pp. 30–35).
[23] Hao's work on sequential relations is reviewed in .

In this thesis, if relevant for the discussion, ideational metaphors are marked with intermittently underlined font (see 2.17-18). For instance, (2.17a) shows a metaphorical realisation of the activity sequence (*use ^ compare*) as a clause. As exemplified in (2.17b), the metaphor can be unpacked using a clause complex, which represents a congruent realisation of the sequence (see Fig. 2.43).

> (2.17a) The number of adverse events was compared with the use of the Kruskal-Wallis test
>
> (2.17b) The number of adverse events was compared by using the Kruskal-Wallis test. (unpacked)

As indicated above, the metaphorically expressed activity sequence in (2.17a) is scaffolded by the metaphorical realisation of the second figure as a nominal group (*the use of the Kruskal-Wallis test*) and the use of the preposition *with* to express a facilitating (*by*) connexion.

Throughout its evolutionary path, scientific discourse has relied on ideational metaphors (in particular, nominalisation) to: (a) facilitate logical reasoning; and (b) develop technicality (Halliday, 2004; Halliday & Martin, 1993; Martin & Veel, 1998).

To build a compelling argument, a text needs to constantly move from "this is what we have established so far' [i.e., the 'taken for granted' part]" to "this is what follows from it next [i.e., the 'new' part]" (Halliday, 1993, p. 89). At the clause level, this transition can be done more effectively by turning one or both parts into nouns and giving thematic prominence to the *established* part (see the example below).

> (2.18a) On the basis of the safety of tDCS [transcranial direct current stimulation] that has been observed in previous studies, we conducted a noninferiority trial…

In (2.18a), there is a transition from reviewing relevant research to introducing the writer's own study as a logical response to the needs of the medical discourse community. Grammatically, this is facilitated by a prepositional phrase as a marked Theme, which uses nominalisation to summarise the previous discussion and relate it to the following methodology recount (*on the basis of the safety of tDCS..., we...*). At the lexicogrammatical level, the metaphorically expressed figure (underlined in 2.18a) can be unpacked as a dependent clause (underlined in 2.18b).

> (2.18b) Since the reviewed studies had observed (i.e., found) that tDCS [transcranial direct current stimulation] is safe, we conducted a noninferiority trial…

According to Halliday (1998), ideational metaphors such as those in (2.17a) and (2.18a) are considered to be "live" (i.e., **instantial**) because they can be unpacked using a more congruent wording (see 2.17b and 2.18b).

In contrast, Halliday (1998) recognises the concept of "dead" (i.e., **systemic**) metaphors, which have become **technicalised** and hence cannot be unpacked. Both (2.17a) and (2.18a)

include examples of nominalised verbs as dead metaphors: *Kruskal-Wallis test* and *transcranial direct current stimulation* (*tDCS*). In SFL, **technicality** is the product of the process called **distillation**, which "*compacts* and *changes* the nature of everyday words" through a field-specific definition (Martin, 1993, p. 191, emphasis in original). For instance, (2.19) provides a *tDCS* definition used in clinical psychology, as phrased by *The Royal Australian and New Zealand College of Psychiatrists*.

> (2.19) (clinical psychology) **tDCS** is a brain stimulation technique that uses constant, low intensity, unidirectional current delivered through electrodes placed on the scalp to subtly modify brain activity. (ranzcp.org)

It needs to be emphasised that distillation does not necessarily involve nominalisation. In (2.20), for example, the word *marsupial* is "distilled" as a technical term in the field of biology.

> (2.20) (biology) **Marsupials** (e.g., **wombats, possums, and kangaroos**) are warm-blooded mammals that give birth to live young with no placental attachment and carry the young in a pouch until they are weaned. (Martin, 1993, p. 191)

In any case, it is argued that technicalisation entails abstraction as learning terminology requires learning its linguistic definitions.

At first glance, the concepts of ideational metaphor, technicality, and abstraction appear to be clearly defined. Ideational metaphors refer to instances of inter-stratal tension between discourse semantics and lexicogrammar, while technicality refers to linguistically defined abstract entities. Upon further examination, however, the relationships among these concepts seem to be "far from clear" (Hao, 2020a, p. 7). Martin and Rose's (2007) classification of abstract and metaphoric entity types is a case in point. According to Martin and Rose, technical entities are a subtype of abstract entities (see Section 2.3.1). Nevertheless, it can be argued that using a linguistic definition to "distil" the meanings of concrete words such as *kangaroo* does not make a kangaroo less tangible (cf. Hao, 2020b, 2020a). Furthermore, Martin and Rose identify metaphoric entities as those that are derived from ideational metaphors (either processes or qualities). The concept of metaphoric entities, however, fails to distinguish between "dead" metaphors (e.g., *Kruskal-Wallis test* in (2.17)) and instances of incongruent realisations of discourse semantic units (i.e., the nominal group *the use of Kruskal-Wallis test* realising a figure (2.17a)).

To clarify the relationships among ideational metaphor, technicality, and abstraction, Hao (2020b, 2020a) proposes a multi-stratal perspective on ideational discourse semantic resources (entities, figures, and sequences), which draws on:

- SFL's recent developments in field (Doran & Martin, 2021; Hood, 2010; see also Section 2.2.3.3);
- discourse semantic models of meaning-making resources (Hao, 2015, 2020a; Hood & Martin, 2005; Martin & Rose, 2007; Martin & White, 2005; White, 2003); and

- experiential lexicogrammar, including ergative and transitive models of clause TRANSITIVITY (Halliday & Matthiessen, 2014).

Moreover, Hao introduces the concept of two kinds of inter-stratal tension: **remapping** and **reconstrual** of meanings (see Fig. 2.44).
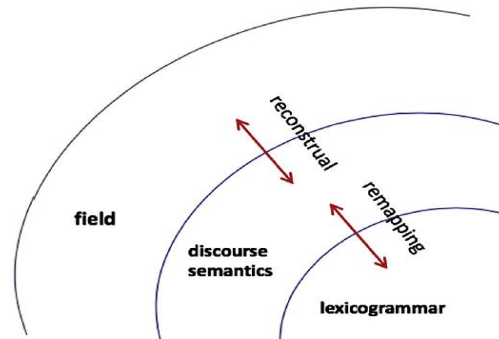
Figure 2.44: Two kinds of "mismatch" of meanings (taken from Hao & Humphrey, 2019, p. 5).

As illustrated in Figure 2.44, remapping of meanings refers to tension between discourse semantics and lexicogrammar, which is comparable to Halliday's concept of "live" metaphors. In other words, incongruent realisations of discourse semantic units (e.g., figures as nominal groups in (2.17-18a)) can be unpacked at the lexicogrammatical level, as exemplified in (2.17-18b). In contrast, reconstrual of meanings entails tension between field and discourse semantics, which corresponds to Halliday's notion of "dead" metaphors. In this case, reconstrued entities are realised congruently as nominal groups (e.g., activity entities *Kruskal-Wallis test* and *tDCS* in (2.17-18a/b)). Reconstrued entities are further reviewed in the following section, which describes entity types in clinical psychology discourse using Hao's (2020b, 2020a) tri-stratal approach.[24]

2.3.1.2 Entities

Clinical psychology RCT reports involve two fields: (a) *randomised controlled trials (RCTs)* as the field of study; and (b) *psychological outcomes* as the object of study (cf. "the field of research" and "the object of study" in Hood, 2010). From a static field perspective, they can be observed through **items** and **itemised activities/properties**, which can be taxonomized in terms of classification or composition (Doran & Martin, 2021). At the discourse semantic level, items and itemised activities/properties are realised by different kinds of **entities** (Hao, 2020a, 2020b).

As briefly discussed in Section 2.2.3.3, *RCT* (i.e., the field of study) represents an itemised activity, which can be unpacked through the following series of smaller itemised

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[24] Note that this section reviews entity types in clinical psychology that have been identified in the dataset of this study (see Section 2.4).

activities: *participant selection ^ randomisation*&masking *^ interventions ^ outcome measurement ^ statistical analysis* (see Fig. 2.45).
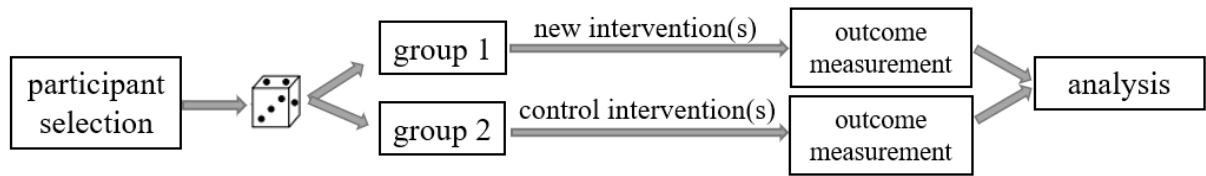
Figure 2.45: The randomised controlled trial (cf. Kendall, 2003, p. 164).

Additionally, each RCT activity can be unpacked as another activity series (e.g., *participant selection = recruitment ^ determination of eligibility*). Itemised activities such as *RCT* or *participant selection* are realised by reconstrued **enacted activity** entities, whose meanings can be unpacked by "recovering the step-by-step activity sequence in the field" (Hao, 2020b, p. 159). The enactment of *RCT* activities implies the use of diagnostic and therapeutic items, including a variety of measurement scales (e.g., *a depression scale*) and/or drugs (e.g., *antidepressants*). According to Hao (2020a), such utilitarian items are realised by **instrumental thing** entities.

To extend medical knowledge in a reliable and ethical manner, *RCTs* require a close cooperation between medical practice and research (see Moher et al., 2010). Thus, the *RCT* field involves medical professionals, patients, clinical researchers, and governing bodies. At the discourse semantic level, these items are construed by entity types labelled as **people** (**observers** or **observed**), **publication**, and **institution** entities. Observers construe taxonomies of people involved in conducting an *RCT* and/or writing an *RCT report* (*general practitioners*, *trial personnel*, etc.), whereas observed people refer to trial participants (e.g., *people with depression*). Furthermore, publication entities create a network of citations within an *RCT report*, locating the *RCT* within a more general field of study (*...[1,2]...[3], etc.*).[25] Lastly, institution entities build a network of regulatory bodies, including policy makers (e.g., *the US Food and Drug Administration*), quality control (e.g., *an institutional review board*), and participating medical institutions (e.g., *Institute of Psychiatry, University of Sao Paulo*). From "below" at the lexicogrammatical level, these four entity types are modelled as **source** entities (Hao, 2020a). This will be discussed later in the section.

A static field perspective on *psychological outcomes* (i.e., the object of study) revolves around: (a) the observations of trial participants; and (b) the efficacy of different treatments (Kendall, 2003). Since items such as *trial participants* and *treatments* can be involved in both the field of study and the object of study, it is important to describe their multiple roles in

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[25] Note that the footnote superscripts in this study's dataset are observed as publication entities because the included RCT reports use footnote referencing styles.

clinical psychology discourse. Realised as observed people and enacted activity entities, *human participants* and *treatments* are inherent parts of *RCTs*. According to the CONSORT Statement, it is essential that *participant* eligibility criteria be clearly defined in order to ascertain external validity of the *RCT* (Moher et al., 2010). In addition, it is crucial that a detailed record of *treatments* be provided to demonstrate data reliability and allow future *RCT* replications. At the same time, the observed people construe sources of the items (e.g., *the participants' reproductive hormone concentrations*) and itemised activities/properties (e.g., *the participants' compulsion/anxiety*) that are used to determine *psychological outcomes*. In turn, the observed *psychological outcomes* are employed to compare *treatments* with reference to their *efficacy*.

At the discourse semantic level, items such as *reproductive hormone* and itemised activities such as *compulsion* are realised by **observational things** and **observational activity** entities, respectively (Hao, 2020b, 2020a). Meaning reconstrual in observational activities can be unpacked through implication activity series. To illustrate, (2.21) provides an explanation of *compulsion*, foregrounding the causal links (***bold italics***).

> (2.21) Compulsions are learned behaviours, which become repetitive and habitual ***when*** [=in case of] they are associated with relief from anxiety. They ***are caused*** by chemical, structural and functional abnormalities in the brain (www.betterhealth.vic.gov.au)

In *RCTs* that deal with *depression* and *anxiety outcomes*, itemised properties can be realised as either **measured/perceived entity dimensions** (e.g., *efficacy/colour*) or **characteristic** entities (e.g., *depression*). According to Hao (2020a), measured and perceived dimensions augment entities by naming quantitative and qualitative properties "based on which the items are distinguished from one another" (p. 82). For instance, *psychological treatments* can be arrayed in terms of their *duration* or *efficacy*. Similarly, *infusion bags* can be arrayed in terms of the perceived *colour* or *shape*. As exemplified in (2.22), RCT reports primarily focus on measuring the *efficacy* dimension of *treatments*.

> (2.22) We conducted the PACT trial to determine the efficacy of prazosin [treatment] in patients with chronic combat-related PTSD who had frequent nightmares.

Furthermore, clinical psychology discourse relies on itemised properties to name *disorders* as reconstrued characteristic entities (e.g., *depression*, *body dysmorphic disorder*). In addition to distinguishing between class members (e.g., *people with mild/major depression*), characteristic entities name properties that condition class membership (e.g., *people with/without depression*). Like in observational activities, meaning reconstrual in characteristic entities can be unpacked through implication activity series. In this case, the implicated activities can involve biological and/or social factors leading to a psychological disorder. For example, (2.23) explains *post-partum depression* as a result of the body's *failure to adapt to abrupt changes in allopregnanolone concentrations*.

(2.23) Post-partum depression is triggered *if* GABAA receptors fail to adapt to abrupt changes in allopregnanolone concentrations after childbirth.

As clinical psychologists are primarily concerned with diagnostic assessment, the meaning of characteristic entities can also be unpacked by recovering the reasoning behind its clinical diagnosis (cf. "reasoning" activities in Hao, 2020a). As an illustration, (2.24) lists the diagnostic criteria for body dysmorphic disorder.

(2.24) ***Clinical psychologists can conclude*** that a person has body dysmorphic disorder *if*: (a) they are pervasively preoccupied with the perceived defects in physical appearance; ***and*** (b) they exhibit time-consuming compulsive behaviours such as mirror gazing and excessive camouflaging.

To enrich the descriptions of both the field of study and the object of study, writers can use a range of **place** and **time** entities that name **spatio-temporal properties** (Hao, 2020a, 2020b). For instance, *Devon/Durham/Leeds* in (2.25) and *12 weeks* in (2.26) assign spatio-temporal properties to the activity *recruit* and the itemised activity *treatment*, respectively.

(2.25) We recruited participants in Devon, Durham, and Leeds.

(2.26) Treatment lasted 12 weeks.

Finally, the written language of *RCT reports* constitutes its own field in the process of building knowledge in clinical psychology (cf. "field-constituting" mode in Martin & Rose, 2008). From a static perspective, this field is construed through (co-)relations between items such as *question*, *problem*, *hypothesis*, *results*, and so on. Linguistically, these items are realised by **semiotic** entities (Hao, 2020a).

Following a review from "above" at the field level, Figure 2.46 outlines a system network of the entity types identified so far.
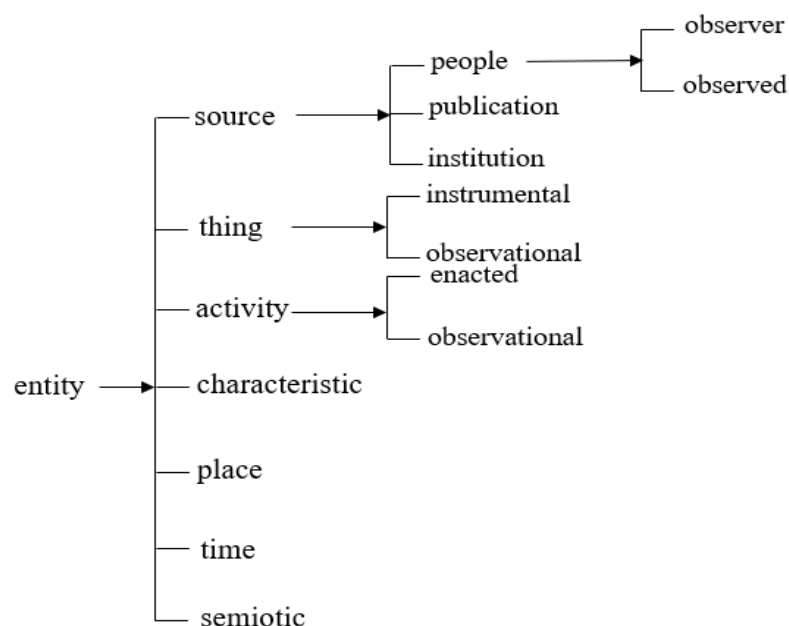
Figure 2.46: Entity types in clinical psychology RCT reports (1) (cf. entity types in biology experiment reports in Hao, 2020a, p. 64).

Looking from "below" at the lexicogrammatical stratum, entities are congruently realised as nominal groups (Hao, 2020a, 2020b, following Halliday and Matthiessen, 2014). As is the case with biology, clinical psychology discourse can construe entities through different group structures, including:

- (Classifier^n) ^ Thing (e.g., *body dysmorphic disorder, cognitive behavioural therapy*);[26]
- Focus ^ Thing (e.g., *a type of outcome variable, duration of spaced therapy*), and
- Possessive Deictic ^ Thing (e.g., *Cohen's d statistic, Hochberg's method*).

Drawing on Halliday and Matthiessen's (2014) transitive model of TRANSITIVITY, Hao argues that entity types can also be observed with reference to their realisations as participants and circumstantial elements in clause configurations. To facilitate such exploration of entities in clinical psychology, Table 2.13 summarises transitivity functions according to different process types.[27]

Table 2.13: Process types: their meanings, characteristic participants, and possible circumstances (adapted from Halliday & Matthiessen, 2014, pp. 311–314).

PROCESS TYPE	Category meaning	Participants (directly involved)	Participants (obliquely involved)	Circumstances
material:	'doing'	Actor, Goal	Recipient, Client; Scope; Initiator; Attribute	Extent: time/space (*how long? how often? how far?*)
action	'doing'			
event	'happening'			Location: time/space (*when? where?*)
behavioural	'behaving'	Behaver	Behaviour	
mental:	'sensing'	Senser, Phenomenon	Inducer	Manner (*how? what with? in what way? like what? to what extent?*)
perception	'seeing'			
cognition	'thinking'			
desideration	'wanting'			Cause (*why? what/who for?*)
affection	'feeling'			
verbal	'saying'	Sayer, Target	Receiver, Verbiage	Accompaniment (*who/what with? who/what else?*)
relational:	'being'			
attribution	'attributing'	Carrier, Attribute	Attributor, Beneficiary	Role (*what as? what into?*)
identification	'identifying'	Identified, Identifier/Token, Value	Assigner	Matter (*what about?*)
existential	'existing'	Existent		Angle (*who says? who thinks?*)

According to Hao (2020b), entities that can be realised as Actors in material and Sayers in verbal processes can be classified as source entities. Put simply, these are the entities that are actively involved and have a say in a(n) experiment or trial. As exemplified in (2.27-33), source

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[26] The superscript ^{n} in Classifier^n indicates that an entity may be realised by nominal groups that contain more than one Classifier.
[27] For a detailed discussion on transitivity functions, see Halliday and Matthiessen (2014).

entities in clinical psychology include people (2.27-30), publications (2.31) and institutions (2.32-33).

(2.27) Trained nurses [Actor] administered the tDCS regimen.

(2.28) Here, we [Sayer] report the results of a randomized, placebo-controlled study of brexanolone.

(2.29) Interested applicants [Actor] had to complete an online screening.

(2.30) In two surveys, people with BDD [Sayer] reported that they had received an empirically supported therapy.

(2.31) As recommended,[18] [Sayer] the MCID for PTSD was calculated as one-half of the SD at baseline.

(2.32) The VA Institutional Review Board [Actor] conducted annual continuing review.

(2.33) The National Institute for Health and Care Excellence (NICE) [Sayer] advises general practitioners to reconsider treatment…

Realised as conscious participants, people entities can also be involved in mental or behavioural processes as Sensers or Behavers (see (2.34-35)).

(2.34) We [Senser] hypothesized that BA is non-inferior to CBT.

(2.35) Between sessions, participants [Behaver] listened to audio recordings.

In clinical psychology, however, a distinction can be made between observer and observed people based on their realisations when co-occurring in behavioural processes that involve cognition. As illustrated in (2.36), the former entities are realised as Behavers, while the latter are realised as Phenomenon-like participants.[28]

(2.36) All participants [Phenomenon-like] were assessed (by investigators [Behaver]) at baseline and after 12 weeks of treatment.

In line with Hao's (2020a) criteria, thing entities are realised as non-conscious participants that are either observed or used. Thus, observational things are typically realised through Phenomena in mental processes (*allopregnanolone* and *neuroactive steroids* in (2.37)). On the other hand, (2.38-39) show that instrumental things such as *web-based application* or *checklist* tend to be realised as Circumstances: location/manner or Goal in material processes.

(2.37) Fluctuations in serum allopregnanolone and other neuroactive steroids [Phenomenon] have been observed in some,[23,26] but not all,[27] women at risk.

(2.38) The randomization sequence was entered by a study statistician into a secure web-based application [Circumstance: location)] using SAS version 9.4 [Goal].

(2.39) Treatment-emergent adverse effects were queried with the SAFETEE-SI checklist. [Circumstance: manner]

---

[28] Behavioural processes that involve cognition are agnate to mental processes, which is why they allow the realisation of Phenomenon-like participants (J. R. Martin, personal communication, December 17, 2020).

As will be shown in Chapters 3 and 4, observational things are rare in clinical psychology discourse. By contrast, instrumental things play an important role in construing reliability. In addition to being realised as Goals, for instance, (2.40) shows that automated instrumental things can be used as Actors to emphasise the minimal involvement of potentially biased and/or fallible observers.

> (2.40) A computer-based system [Actor] allocated the first 20 participants to each group on a truly random basis.

At the lexicogrammatical level, activity entities symbolise **acts** or **macrophenomena** (Hao, 2020a, 2020b). As shown in (2.41), it is possible to identify an activity entity (e.g., *RCT*) by using embedded material clauses as Values/Identifiers in relational processes (e.g., *[[to select…, randomise,…]]*).

> (2.41) An RCT [Token/Identified] is [[to select participants, randomise them to different interventions, measure outcomes, and analyse statistical data]] [Value/Identifier]. (invented example)

As already outlined in Figure 2.46, a distinction can be made between enacted activities (e.g., *RCT*, *analysis*) and observational activities (e.g., *fluctuation*, *response*).

When construing the field of study, enacted activity entities are typically realised as Goals in material processes with observers as Actors, which is in accordance with Hao's (2020a) findings. When construing the object of study, however, they tend to be realised as Phenomenon-like participants in (cognitive) behavioural processes with observers as Behavers. This is illustrated in (2.42), which shows *PACT trial* as the field of study and *the efficacy of prazosin treatment* as the object of study.

> (2.42) We [Actor] conducted the PACT trial [Goal] to (= so that we [Behaver] can) evaluate the efficacy of prazosin treatment [Phenomenon-like].

Even if construing the field of study, enacted activities in clinical psychology can still be realised as Phenomenon-like in behavioural or as Targets in verbal processes. In these cases, however, it is institution entities that are realised as Behavers or Sayers because *RCTs* require the involvement of regulatory bodies.[29] This is exemplified in (2.43-44).

> (2.43) The Data and Safety Monitoring Committee [Behaver] reviewed the study [Phenomenon-like] biannually.
>
> (2.44) The study [Target] was approved by The Veterans Affairs (VA) Office of Research [Sayer].

Furthermore, enacted activities can be realised through Location/Extent (e.g., *in/during the trial…*) and Manner (e.g., *…with similar methods*) circumstances. At the group level, they tend

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[29] Institutions can be realised as Behavers because these cases represent instances of metonymy, in which institution entities symbolise the employed people entities.

to be used as Classifiers or Qualifiers that specify expertise (e.g., *CBT* experts; *psychological therapists clinically experienced in BA or CBT*).

Being the object of study, observational activity entities name a range of "goings-on" observed by scientists (Hao, 2020a). In biology, these activities are initiated by observational things, which can be made visible through Classifiers at the group level. For instance, a *dispersal* initiated by *fungal spores* can form the observational activity *fungal spore dispersal*. Although similar instances have been found in RCT report Introductions/Methods (e.g., *hormone fluctuation*), they are quite scarce (see Chapters 3 and 4). Instead, observational activity entities are typically initiated by observed people (e.g., *score* or *response*). At the clause level, they are commonly realised through Values/Identifiers in processes that identify outcome measures, as in (2.45-46).

> (2.45) The primary outcome was BDI II score at 12 weeks after randomisation [Value/Identifier].
>
> (2.46) Secondary outcomes were: response [Value/Identifier], (response [Token/Identified] is) defined as at least a 50% reduction in BDI II score [Value/Identifier]…

As shown in (2.46), an observational activity such as *score* can be used to identify another observational activity such as *response* via a hypotactic elaborating clause (a traditional non-defining clause).[30] At the nominal group level, RCT discourse tends to use Classifiers to disclose instrumental things. For example, a *depression severity score* facilitated by the *BDD II scale* can constitute the observational activity *BDD II score*.

As discussed from a field perspective, this research has discovered that clinical psychology discourse relies on itemised properties such as *depression* or *body dysmorphic disorder* to distil its terms as reconstrued characteristic entities. Grammatically, characteristic entities are usually realised in pairs as Tokens/Identified (e.g., *BDD*) and Values/Identifiers (e.g., *psychiatric disorder*), which is illustrated in (2.47).

> (2.47) Body dysmorphic disorder (BDD) [Token/Identified] is a psychiatric disorder [[(the disorder [Token/Identified] is) accompanied by compulsive behaviours [Value/Identifier]]] [Value/Identifier].

As shown in the embedded clause in (2.47), characteristic entities can also be identified with reference to observational activity entities realised as Values/Identifiers (e.g., *compulsive behaviours*). Furthermore, they can be realised as Attributes in relational processes with observed people as Carriers (see (2.48)).

> (2.48) Patients [Carrier] were excluded if they had current dementia [Attribute 1], an eating disorder [Attribute 2], or a seizure disorder [Attribute 3].

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[30] In this thesis, *score* is analysed as an observational activity entity, meaning "to get a point in a test" (Cambridge Dictionary).

Alternatively, the meanings in (2.48) can be realised at the group level using a Thing ^ *with*-Qualifier structure (*patients with current dementia, an eating disorder, or a seizure disorder*).

When it comes to place (e.g., *site*) and time (e.g., *month*), these entities are commonly found within Circumstances: extent/location, as illustrated in (2.49-50).

(2.49) We recruited patients in four sites [Circumstance: location].

(2.50) Both groups were followed for three months [Circumstance: extent].

Finally, Hao (2020a) distinguishes among three kinds of semiotic entities, which are typically realised by nouns referring to **locutions**, **ideas**, and **facts**.[31] Locution entities are realised by nouns such as *report* or *statement*, while ideas are realised by nouns such as *plan* or *hypothesis*. In the case of facts, more delicate types include **cases** (e.g., *problem*, *fact*), **needs** (e.g., *requirement*, *protocol*), **chance** (e.g., *likelihood*), and **consequences** (e.g., *reason*, *result*). Among consequences, an additional distinction can be made between entities that symbolise external causality and those that denote internal causality. The former entities are referred to as **semiotic result** (e.g., *result*, *finding*), whereas the latter are called **semiotic proof** (e.g., *evidence*, *symptom*).[32]

In Hao's (2020b, 2020a) model, the concept of a linguistic definition is disassociated from the notion of tangibility (i.e., abstraction). Save for semiotic entities, which are a purely linguistic phenomenon, all entity categories can be defined **'ostensively'** or **'linguistically'**. These options are formalised as the DEFINITION system, which complements CATEGORISATION in the organisation of entity types. As will be shown in Chapters 3 and 4, linguistic entity definitions play an important role in construing trial justification and scientificity in RCT reports. At the lexicogrammatical level, linguistic definitions are realised through identifying relational processes, as illustrated in (2.51-52).

(2.51) Present-centered therapy [Token/Identified] is [Process (present tense)] a non–trauma-focused, manualized treatment that controls for nonspecific therapeutic factors.

(2.52) The PACT trial [Token/Identified] was [Process (past tense)] a 26-week, multicenter, double-blind, randomized, controlled trial that was conducted at 13 VA medical centres.

In clinical psychology, depending on whether they contain present or past tense processes, a distinction can be made between **general** (2.51) and **study-specific** (2.52) definitions.

Due to its importance for construing specificity in scientific discourse, this thesis proposes that CHARACTERISATION be added to the systems organising entity typology. From a static field perspective, it is argued that entity characterisation serves to deepen existing

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[31] For a table of common nouns referring to propositions of locutions, ideas, and facts, see Halliday and Matthiessen (2014, p. 536).

[32] Unlike metaphorically realised connexions (see Section 2.3.2), semiotic entities are not used to link metaphorically expressed processes.

taxonomies through item sub-classification. To construe more delicate items, **characterised** entities can subsume the meaning of another characterising entity, which makes them distinct from the other taxonomy members. For example, characterised observers can subsume the meaning of an enacted activity entity that specifies their expertise (e.g., *cognitive behavioural therapy (CBT)* in *CBT therapist*). Likewise, characterised instrumental things can subsume the meaning of an enacted activity they facilitate (e.g., *screening* in *screening instrument*). Furthermore, entity characterisation may involve characteristics that: (a) realise spatio-temporal properties (e.g., *26-week* trial); or (b) are distilled from qualitative properties (e.g., *(clinically) depressed* person). Looking from 'below' at the lexicogrammatical level, characterised entities can be realised through nominal groups structured as Classifier ^ Thing (e.g., *CBT therapist*) or Possessive Deictic ^ Thing (e.g., *Hochberg's method*). As exemplified in (2.53), they can also be realised as Classifier if used as an adjectival Attribute in relational clauses.

> (2.53) Patients with a suboptimal response to a treatment course with an SSRI, SNRI were eligible [Attribute].

In this case, the entity that is being characterised, which is omitted, is realised at the clause level as Carrier (e.g., *eligible (patients)*).

As Halliday and Matthiessen (2014) note, the same adjectives can function as Epithets and Classifiers. For example, *depressed* can mean *very sad* (Epithet) or *mentally disordered* (Classifier). Therefore, it is important to devise a test that distinguishes between Classifiers, which realise entity characterisation, and Epithets, which assign qualities. The possibility of meaning reconstrual can provide a useful criterion. More precisely, only the nominalised forms of Classifiers construe characteristic entities, which in turn can be realised through nominal Attributes in possessive clauses or *with*-Qualifiers in nominal groups. In (2.54), for instance, *depressed*, which characterises the entity *people*, can be alternatively realised as the characteristic entity *depression*.

> (2.54) Regular exercise can help depressed people / people [[who have depression]] / people with depression. (invented example)

In (2.55), however, the alternative realisation is not possible because *depressed* construes the meaning of *being very sad* (Epithet).

> (2.55) He was depressed / *had depression over the test results. (invented example)

Following the analysis from "below" at the lexicogrammatical stratum, Figure 2.47 outlines the updated system network of entity types in clinical psychology.
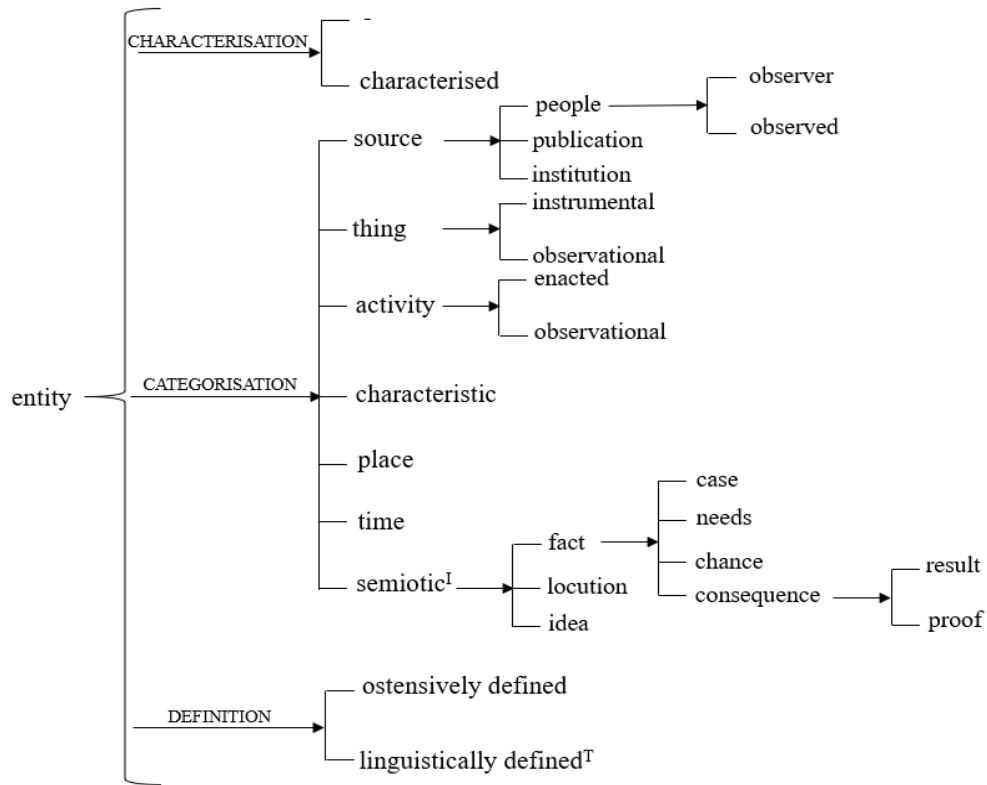
Figure 2.47: Entity types in clinical psychology RCT reports (2) (cf. entity types in biology experiment reports in Hao, 2020a, p. 73).

According to Hao, entity types can be augmented using DIMENSIONALITY, which consists of features that name "taxonomic relations as well as the criteria based on which taxonomic relations are established" (2020a, p. 80). Like biology, clinical psychology discourse relies on four types of **dimension** for entity augmentation: '**categorised**' (e.g., *type*, *kind*), '**structured**' (e.g., *part*, *segment*), '**measured**' (e.g., *duration*, *efficacy*), and '**perceived**' (e.g., *shape*, *colour*). At the field level, categorised and structured entity dimensions provide labels for taxonomic relations. As mentioned earlier in the section, measured and perceived entity dimensions construe itemised properties used for comparing and arraying class members. In discourse, dimensions are combined with entities into one discourse semantic unit: dimension>entity (e.g., *the efficacy of > prazosin*, *treatment < duration*). Therefore, ENTITY TYPE and DIMENSIONALITY represent simultaneous entity systems (see Fig. 2.48).
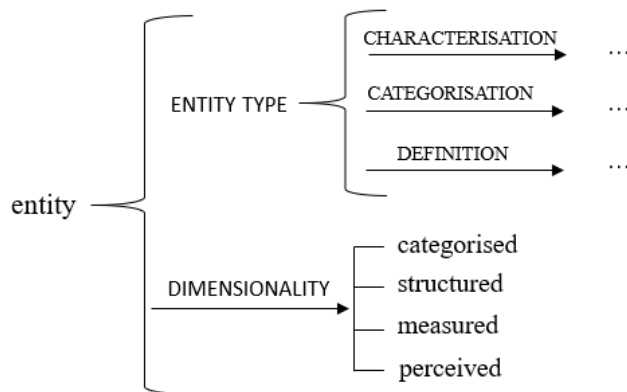
Figure 2.48: Extended network system of entities (cf. Hao, 2020a, p. 90).

At the lexicogrammatical level, dimensioned entities are realised through nominal groups with one of the following structures:

- Thing (e.g., *type*, *parts*, *colour*, *duration*), with the entity understood in co-text;
- Focus ^ Thing (e.g., *a type of > outcome variable*);
- Classifier ^ Thing (e.g., *package < size*);
- Possessive Deictic ^ Thing (e.g., *patient's < age*); or
- Thing ^ *of*-Qualifier (e.g., *groups < of different sizes*).

As will be shown in Chapters 3 and 4, evaluative measured entity dimensions such as *efficacy*, *safety*, or *cost* are of great significance for construing trial justification. However, it is important to distinguish between measured dimensions as evaluative criteria and ideational metaphors as actual evaluation. In (2.56), for example, *efficacy* is used as a criterion for comparing *BDD-NET* and *online supportive therapy*.

> (2.56) We evaluated the efficacy of BDD-NET compared with online supportive therapy.

Looking from "above", *efficacy* in (2.56) names the itemised property. On the other hand, (2.57) uses *efficacy* as a discourse semantic quality that construes property at the field level.

> (2.57) Several studies have shown efficacy of aripiprazole as an antidepressant augmentation strategy. (unpacked: aripiprazole is efficacious)

From "below", this evaluative quality is metaphorically realised as a noun, which means it can be unpacked as an adjective (*efficacious*).

In conclusion, this section has provided a comprehensive review of entities in clinical psychology discourse, looking from both field and lexicogrammatical perspectives. To observe entities from "around", it is possible to examine their interactions with other discourse semantic resources. In this exploration of trial justification and scientificity in RCT reports, the interaction between entities and interpersonal resources was of particular interest. A systemic-functional approach to such evaluative "couplings" is discussed in detail in Section 2.3.3.1.

2.3.1.3 Figures

According to Hao (2020a), **figures** represent orbital configurations of entities, occurrences ("events" in Martin, 1992), and qualities. Hao's figure typology builds on Martin and Rose's (2007) nuclear relations in IDEATION, which were reviewed in Section 2.3.1. From "above", this model can be observed through Doran and Martin's (2021) field network.

To facilitate a discussion on figure types, it is necessary to introduce Hao's (2020a) view on discourse semantic units that enter configurations with entities: **occurrences** and **qualities**. In (2.58-60), entities are underlined and occurrences/qualities are *italicised*.

(2.58) <u>Trained nurses</u> *administered* <u>the tDCS regimen</u>.

(2.59) <u>Post-traumatic stress disorder (PTSD)</u> can be *debilitating*.

(2.60) <u>Participants</u> *were allocated randomly*.

Grammatically, (2.58) exemplifies a material clause. The Participants are realised by nominal groups, which construe discourse semantic entities (*trained nurses*, *the tDCS regimen*). The Process is realised by a verbal group, which construes a discourse semantic occurrence (*administered*). Occurrences can be realised through Processes in material (e.g., *administered* in (2.58)), behavioural (e.g., *participants <u>listened</u>*), or occasionally verbal (e.g., *the study was <u>approved</u>*) clauses. In addition, occurrences can be realised through Process ^ Range: process structures such as *have a procedure* or *play tennis*. In Hao's (2020a) model, entities and occurrences represent central discourse semantic units in figure configurations. Looking from "above", entities and occurrences construe static and dynamic field perspectives, respectively (Doran & Martin, 2021).

In (2.59), the figure comprises an entity (*PTSD*) and a quality that describes it (*debilitating*). Looking from "below", (2.59) is realised through a relational attributive clause with entity and quality realised as Carrier and Attribute, respectively. At the group level, qualities can be realised as Epithets describing a Thing (e.g., *debilitating disorder*). As shown in (2.60), qualities can also qualify occurrences (e.g., *allocated <u>randomly</u>*). Grammatically, these qualities are realised via adverbs functioning as Circumstance: manner (e.g., *randomly* in (2.60)) or through inherently qualified Processes (e.g., *randomised = allocated randomly*). At the field level, qualities construe qualitative properties, which can be assigned to both items and activities (Doran & Martin, 2021).

In Hao's (2020a) figure typology, a broad distinction can be made between **occurrence** and **state** figures (see Fig. 2.49). In terms of nuclearity, occurrence figures are centred around occurrences (dynamic field), whereas state figures are centred around one or more entities (static field).
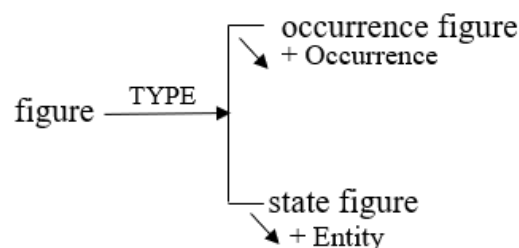
Figure 2.49: Basic figure options (cf. Hao, 2020a, p. 94).

At the lexicogrammatical level, occurrence figures are congruently realised as different types of clausal structures, as exemplified in (2.61-66). If needed, this thesis uses boxed font to draw attention to occurrences in the numbered examples.

(2.61) It $\boxed{\text{is snowing}}$.

(2.62) The gap $\boxed{\text{increased}}$.

(2.63) All authors $\boxed{\textit{had access}}$.

(2.64) We $\boxed{\text{evaluated}}$ the efficacy of BDD-NET.

(2.65) We $\boxed{\text{used}}$ a three stage recruitment process.

(2.66) The study $\boxed{\text{was approved}}$ (by the regulatory body).

As shown in (2.61), it is possible for a figure to only include an occurrence. Such configurations, which are realised through "meteorological" clauses, are referred to as **self-engendered** (Hao, 2020a). In contrast, **engendered** figure types include entities with varying degrees of occurrence centrality (see (2.62-66)).

From an ergative perspective, (2.62) and (2.63) contain entities in their nuclei (*the gap*, *all authors*). These entities, which are grammatically realised as Mediums, extend ('+') the occurrences (cf. Halliday's (2014) models of ergativity and logico-semantic relations, as discussed in Section 2.3.1).[33] Furthermore, (2.63) contains a Range: process (*access*), which contributes to the construal of the occurrence in the figure's centre (*had access*). Following Hao (2020a), Tables 2.14-15 showcase the orbital structures of the figures presented in (2.62-63).

Table 2.14: Orbital structure of an engendered figure (1) (cf. Hao, 2020a, p. 96).

	nucleus	
	centre	
discourse semantics	occurrence	+entity
(2.62)	*increased*	*the gap*
lexicogrammar	Process	Medium
	verbal group	nominal group

Table 2.15: Orbital structure of an engendered figure (2) (cf. Hao, 2020a, p. 96).

	nucleus		
	centre		
discourse semantics	occurrence		+entity
(2.63)	*had*	*access*	*all authors*
lexicogrammar	Process	Range: process	Medium
	verbal group	nominal group	nominal group

In (2.64), the occurrence figure involves two entities, which are realised as the Medium (*we*) and the Range: entity (*the efficacy of BDD-NET*). As Hao argues, a Range: entity "construes the **domain** of the occurrence instead of the occurrence itself" (2020a, p. 95). For instance, *the effectiveness of alternative MDD treatments* exists with or without the act of *evaluating* them. Realised through behavioural clauses, occurrence figures that focus on

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[33] For an overview of participant functions, showing ergative and transitive equivalents, see Halliday and Matthiessen (2014, p. 344).

domains of cognition (*observe*, *evaluate*, *determine*, etc.) play an important role in academic discourses (cf. Nesi & Holmes, 2010). As indicated in Table 2.16, domain entities belong to the nucleus, both elaborating and extending the occurrence ('=+').

Table 2.16: Orbital structure of a domained occurrence figure (cf. Hao, 2020a, p. 96).

	nucleus		
	centre		
discourse semantics	occurrence	=+entity	+entity
(2.64)	*evaluated*	*the efficacy of BDD-NET*	*we*
lexicogrammar	Process: behavioural	Range: entity	Medium
	verbal group	nominal group	nominal group

In experimental research, occurrence figures are typically realised through effective (i.e., agentive) clauses, which revolve around material (e.g., *used* in (2.65)) and occasionally verbal (e.g., *was approved* in (2.66)) processes. As shown in (2.65-66), these clauses involve an Agent participant, which construes a **perpetrator** entity. In receptive (i.e., passive) voice, these entities may be omitted (e.g., (2.66)), which makes them optional. Accordingly, Hao (2020a) suggests that perpetrator entities both extend and enhance ('+x') the figure, placing them at the margin of the inner orbit (see Table 2.17).

Table 2.17: Orbital structure of a perpetrated occurrence figure (cf. Hao, 2020a, p. 97).

	inner orbit		
	nucleus		
	centre		
discourse semantics	occurrence	+entity	+x entity
(2.65)	*used*	*a three stage recruitment process*	*we*
(2.66)	*was approved*	*the study*	*(by the regulatory body)*
lexicogrammar	Process: material (2.65)/verbal (2.66)	Medium	Agent
	verbal group	nominal group	nominal group

Whether domained/perpetrated or not, engendered figures can be either **enacted** or **observed** (Hao, 2020a). This is comparable to the distinction between enacted and observational activity entities, which were discussed in the previous section.

To further enhance ('x') the occurrence, figures can include entities realised through Circumstances. These optional elements are found at the periphery of the inner orbit. In undergraduate biology, entities realised as Manner and Location: place/time are used to enhance occurrences in experiment reports (Hao, 2020a). Furthermore, Circumstances such as Place and Time have been found to be significant features in history and creative writing discourses (Dreyfus & Hao, 2020). As will be shown in Chapters 3 and 4, RCT report Introductions/Methods contain entities that can enhance the occurrences in terms of: (a) manner (*how?*); (b) spatio-temporal location/extent (*when? where?/ how long/often? how far?*); and/or

(c) cause (*why?*) (cf. enhancing circumstantial elements in Halliday & Matthiessen, 2014, p. 313). Therefore, there is the option of making the occurrences **instrumented** (2.67), **situated** (2.68), **distributed** (2.69), and/or **reasoned** (2.70).

> (2.67) Treatment-emergent adverse effects were queried with the SAFETEE-SI checklist [Manner]
>
> (2.68) The trial was conducted at the University Hospital [Location].
>
> (2.69) The participant was standing for 2 minutes [Extent].
>
> (2.70) This follow-up point was not included in the trial registration because of an administrative error [Cause]

In Table 2.18, (2.68) is used to illustrate the orbital structure of an occurrence figure structure with a peripheral entity.

Table 2.18: Orbital structure of an occurrence figure with a peripheral entity (cf. Hao, 2020a, p. 98).

	inner orbit			
	nucleus			
	centre		**margin**	**periphery**
discourse semantics	occurrence	+entity	+x entity	x entity
(2.68)	*was conducted*	*the trial*	*(by us)*	*at the University Hospital*
lexicogrammar	Process: material	Medium		Circ: location
	verbal group	nominal group		prep. phrase

Based on the above discussion, Figure 2.50 shows a system network of engendered occurrence figures, which are relevant to the exploration of a scientific base construal in clinical psychology from a dynamic field perspective.
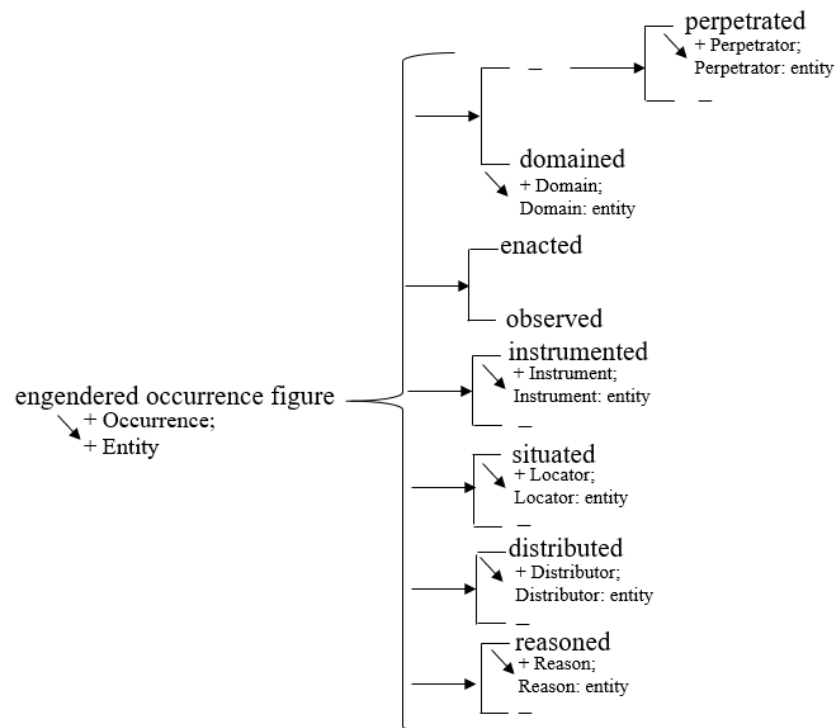
Figure 2.50: Types of occurrence figures in clinical psychology RCT reports (cf. Hao, 2020a, p. 94).

Unlike occurrence figures, state figures can be realised congruently through clauses as well as nominal groups (Hao, 2020a). At the clause rank, state figures are typically realised through existential or different types of relational processes (see (2.71-74)). If needed, this thesis also uses boxed font to draw attention to relations in the numbered examples.

(2.71) There is a gap.

(2.72) Present-centred therapy is (defined as) a non-trauma-focused, manualized treatment [[that controls for nonspecific therapeutic factors]].

(2.73) Clinical depression is (categorised as) a mental health disorder.

(2.74) PTSD can be *debilitating*.

As exemplified in (2.71-74), existential clauses (2.71) construe figures that introduce an entity, while relational clauses (2.72-74) construe figures that involve entity-entity or entity-quality relations. Accordingly, Hao (2020a) distinguishes between two types of state figures: **presented** and **related**. Among related figures, two more delicate options are identified: **co-elaborated** (2.72-73) and **extended** (2.74) (cf. elaboration and extension in Halliday & Matthiessen, 2014).

If 'presented', the figure consists of a single entity, which is at its centre. To illustrate, Table 2.19 showcases the orbital analysis of (2.71).

Table 2.19: Orbital structure of a presented state figure (cf. Hao, 2020a, p. 99).

	centre	
discourse semantics	entity	
(2.71)	*there is*	*a gap*
lexicogrammar	Process: existential	Medium
	verbal group	nominal group

Alternatively, presented figures can be realised through material processes such as *exist* (e.g., *a gap exists*) or certain attributive processes (e.g., *a gap is present*).

Drawing on Halliday and Matthiessen's (2014) concept of elaboration, Hao (2020a) defines **co-elaboration** ('=') as a relation between entities that involves **exposition** or **exemplification** (e.g., (2.72-73)). More precisely, exposition entails restating the meaning of an entity through naming (*A is called B*), unpacking (*A is defined as B*), categorising (*A is categorised as B*) or including (*A comprises B*). Grammatically, they can be realised through either identifying (e.g., (2.72)) or attributive (e.g., 2.73) clauses. Alternatively, they can be realised through paratactic nominal group complexes (e.g., *clinical depression, a mental health disorder*). Regardless of the lexicogrammatical realisation, co-elaborating entities have "an equal status in the discourse", which means they are both central to the figure. For instance, Table 2.20 shows the orbital structures of (2.72-73).

Table 2.20: Orbital structures of co-elaborated state figures (cf. Hao, 2020a, p. 100).

	centre		
discourse semantics	entity	=	entity
(2.72)	*present-centred therapy*	*is*	*a non-trauma-focused, manualized treatment [[that controls for nonspecific therapeutic factors]]*
(2.73)	*clinical depression*	*is*	*a mental health disorder*
lexicogrammar	Token (2.72)/Carrier (2.73)	Process	Value (2.72)/Attribute (2.73)
	nominal group	v. gr.	nominal group

In the current dataset, co-elaborated figures were also found to be realised through middle material processes with a circumstantial Role element (e.g., <u>*the lead author* works as *a clinician*</u>). Looking from "above", co-elaborated figures construe a static field by building taxonomies (Doran & Martin, 2021). In addition, figures that co-elaborate reconstrued activity entities play an important role in construing a dynamic perspective on the *RCT* field (see Chapters 3 and 4).

If 'extended', figures involve a quality in the nucleus which describes an entity (Hao, 2020a, following Martin, 1992). For example, Table 2.21 shows the orbital structure of (2.74).

Table 2.21: Orbital structure of an extended state figure (description) (cf. Hao, 2020a, p. 101).

	nucleus		
	centre		
discourse semantics	entity	+ quality	
(2.74)	*PTSD*	*can be*	*debilitating*
lexicogrammar	Medium/Carrier	Process: attributive	Range/Attribute
	nominal group	verbal group	adj. gr.

Grammatically, extended figures can be realised through: (a) an attributive clause with a descriptive adjectival Attribute (e.g., *debilitating* in (2.74)); or (b) a nominal group structured as Epithet ^ Thing (e.g., *a debilitating disorder*). At the field level, figures such as (2.74) are used to add ('+') qualitative properties to items. Furthermore, the qualities that construe properties can be oriented toward **attitudinal** or **epistemological** meanings. As elaborated in Section 2.3.3.1, qualities represent a key source in appraising research.

In clinical psychology discourse, it is possible to make distinction between extended figures that involve **description** (e.g., (2.74)) and those that include **possession** (e.g., (2.75)).

(2.75) … when participants had a new email.

As shown in (2.75), extended figures can involve an extending (+) entity, which indicates a possession of the central entity. At the lexicogrammatical level, such figures can be realised through : (a) a possessive attributive clause with a nominal Attribute (e.g., (2.75); cf. Range: possession in Martin & Rose, 2007); or (b) a nominal group structured as Possessive Deictic ^ Thing (e.g., *participant's new email*). Like qualities, the extending entities are in the figure's nucleus, which is illustrated in Table 2.22.

Table 2.22: Orbital structure of an extended state figure (possession).

	nucleus		
	centre		
discourse semantics	entity	+ entity	
(2.75)	*participants*	*had*	*a new email*
lexicogrammar	Medium/Carrier	Process: attributive (poss.)	Range/Attribute
	nominal group	verbal group	nominal group

To construe the links between itemised properties (i.e., *disorders*) and itemised activities (i.e., *behaviours/the efficacy of treatments*), it was found that clinical psychology discourse also relies on state figures that express entity **correlation** (see (2.76-77)).

(2.76) Body dysmorphic disorder (BDD) is associated with functional impairment.

(2.77) Treatment lasted 12 weeks.

Since figures such as (2.76-77) involve circumstantial relations, they can be classified as **enhanced** (cf. enhancement in Halliday & Matthiessen, 2014). Grammatically, enhanced figures can be realised as circumstantial identifying (2.76) or attributive (2.77) clauses. Alternatively, they can be realised through nominal groups structured as Thing ^ Qualifier (e.g., *functional impairment in BDD*, *treatment of 12 weeks*). Due to their circumstantial meaning, the enhancing ('x') entities belong to the periphery of the inner orbit, as shown in Table 2.23.

Table 2.23: Orbital structure of an enhanced state figure.

	inner orbit			
	nucleus			
	centre		margin	periphery
discourse semantics	entity			x entity
(2.76)	*BDD*			*is associated with* / *functional impairment*
(2.77)	*Treatment*			*lasted* / *12 weeks*
lexicogrammar	Token (2.76)/Carrier (2.77)			P: identifying (2.76)/attributive (2.77) (circ.) / Value (2.76)/Attribute (2.77)
	nominal group			verbal group / nominal gr.

Drawing on Doran and Martin's (2021) model of field interdependency, enhanced figures are used to construe enhanced interrelations between:

- itemised properties and itemised activities (e.g., (2.76)); or
- itemised properties/activities and spatio-temporal properties (e.g., (2.77)).

Lastly, if the enhancement relations provide criteria for organising taxonomies, the figures can be rephrased as characterised entities (e.g., *BDD-related functional impairment*, *12-week treatment*).

Based on the above discussion, Figure 2.51 shows a system network of state figures, which are relevant to the exploration of a scientific base construal in clinical psychology from a static field perspective.
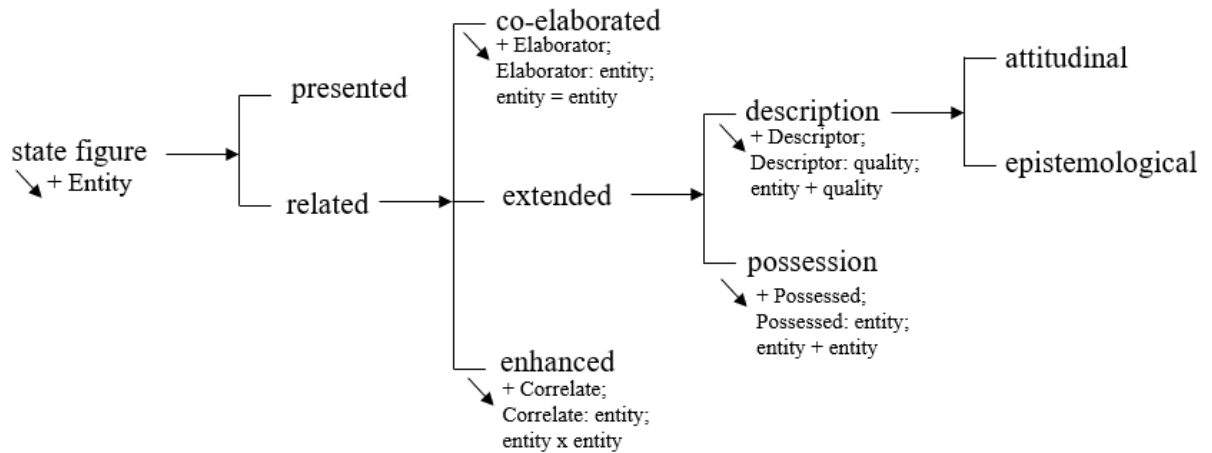
Figure 2.51: Types of state figures in clinical psychology RCT reports (cf. Hao, 2020a, p. 94).

Both occurrence and state figure configurations can be augmented in terms of **instigation**, **evaluation**, and/or **position** (Hao, 2020a). Thus, figure TYPE, INSTIGATION, EVALUATION, and POSITION represent simultaneous figure systems (see Fig. 2.52).
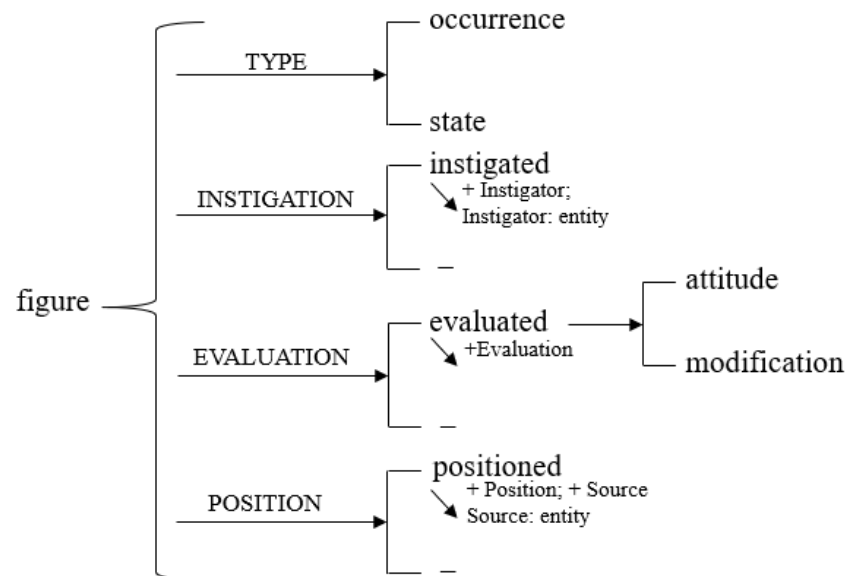
Figure 2.52: Expanded system of figure types (adapted from Hao, 2020a, p. 102).

In this thesis, the numbered examples use shading to draw attention to the linguistic resources that augment a figure (see, e.g., (2.78-79)).

(2.78) Therapists encouraged participants to complete the survey.

(2.79) We made the analysis (become) more robust…

As shown in Figure 2.52, a configuration can be augmented by introducing an additional entity that **instigates** the figure. Such structures are exemplified in (2.78-79). Grammatically,

instigated occurrences/relations are typically realised through causative verbal group complexes (e.g., *encouraged … to complete*; *made … (become) more robust*) (cf. causative hypotaxis in Halliday & Matthiessen, 2014). From an ergative perspective, instigator entities (e.g., *therapists* in (2.78) and *we* in (2.79)) are realised through an additional Agent (i.e., process-specific functions: Initiator (material), Inducer (mental), Attributor (attributive), and Assigner (identifying)). Following Hao (2020a), instigator ('xx') entities are placed in the outer orbit of the figure (see Tables 2.24-25).

Table 2.24: Orbital structure of an instigated occurrence figure (cf. Hao, 2020a, p. 103).

	outer orbit			
	inner orbit			
	nucleus			
	centre			
discourse semantics	instigated occurrence	+ entity	+x entity	xx entity
(2.78)	*encouraged…to complete*	*the survey*	*participants*	*therapists*
lexicogrammar	Process: material	Medium/Goal	Agent/Actor	2nd Agent/Initiator
	v. group complex	nominal group	nominal group	nominal group

Table 2.25: Orbital structure of an instigated state structure (1) (cf. Hao, 2020a, p. 104).

	outer orbit			
	inner orbit			
	nucleus			
	centre			
discourse semantics	entity	+ quality		xx entity
(2.79)	*the analysis*	*made…(become) more robust*		*we*
lexicogrammar	Medium/Carrier	P: attributive	Range/Attr.	2nd Agent/Attributor
	nominal group	v. gr.	adj. gr.	nominal group

In clinical psychology, it was found that instigated state figures can also be realised through effective material clauses with Processes such as *randomise* or *include* when followed by the Circumstance: role (see (2.80-81)).

(2.80) Eligible patients were randomly assigned to brexanolone or placebo groups.

(2.81) Baseline scores were included as covariates.

At the discourse semantic level, both (2.80) and (2.81) involve entity co-elaboration (*eligible patients* (*became*) *brexanolone/placebo groups*; *baseline scores* (*were*) *covariates*). Furthermore, the Processes (*randomly assigned*; *included*) imply that the formed relationships were instigated by the investigators (i.e., observer entities). In RCT report Methods, instances such as (2.80-81) play an important role for two reasons. In the co-text, the instigations themselves represent significant occurrences. For instance, *randomisation* is a key stage in conducting an *RCT*. In addition, instigation enables the writer to interweave agency and a decision-making process into the construal of entity relations. In (2.81), for example, the

instigation *were included* suggests a decision, which can be further justified or questioned. Table 2.26 showcases the orbital analyses of (2.80-81).

Table 2.26: Orbital structure of an instigated state figure (2).

discourse semantics	outer orbit					
	inner orbit					
	nucleus					
	centre					
discourse semantics	entity		= entity			xx entity
(2.80)	*eligible patients*	*were randomly assigned*	*to groups*			*(by us)*
(2.81)	*Baseline scores*	*were included*	*as covariates*			*(by us)*
lexicogrammar	Medium/Goal	Process: material	Circ: role			
	nominal group	verbal group	prep. phrase			

The other two types of figure augmentation – **evaluation** and **position** – provide the orbital structure with a **satellite** (Hao, 2020a). As indicated in (2.82-83), evaluation typically involves an anticipatory *it* realised through the Carrier in an attributive process.

(2.82) It is beneficial [[that we use prazosin for trauma-related nightmares]].

(2.83) It is possible [[that unguided web-based interventions would be less effective]].

The *it* participant refers to the evaluated figure, which is realised through an embedded clause (see (2.82-3)). In the attributive clause, the writers can choose between Attributes that express **attitude** (e.g., *beneficial* in (2.82)) or **modification** (e.g., *possible* in (2.83); cf. modality in Halliday and Matthiessen (2014)). In the case of modification, an alternative realisation includes the use of a modal adjunct (e.g., *it is possible* / *possibly*). To illustrate the orbital<satellite structure of an evaluated figure, Table 2.27 shows the analysis of (2.82).

Table 2.27: Orbital<satellite structure of an evaluated figure (cf. Hao, 2020a, p. 106).

				inner orbit			
				nucleus			
				centre		margin	periphery
discourse semantics	evaluation >			figure			
				occurrence	+ entity	+x entity	x entity
(2.82)	*it*	*is*	*beneficial*	*use*	*prazosin*	*we*	*for trauma-related nightmares*
lexico-grammar	Med/ Carrier	P: attr.	Range/ Attribute	Process: material	Medium	Agent	Circ: cause
	n.gr.	v.gr.	adj	v. gr.	n.gr	n. gr.	prep. phrase

To construe a positioned figure, writers/speakers can use verbal (e.g., *we argue*) or mental (e.g., *they hypothesised* in (2.84)) clauses, which can project locutions or ideas through another clause (Halliday & Matthiessen, 2014).

(2.84) We hypothesised that behavioural activation is cost-effective.

Realised as Sayers/Sensers, position sources may include source entities (e.g., *we* in (2.84)), enacted activity entities (e.g., *the study has shown…*), and semiotic entities (e.g., *the results suggest…*). Illustrating the orbital<satellite structure of a positioned figure, Table 2.28 shows the analysis of (2.84).

Table 2.28: Orbital<satellite structure of a positioned figure (cf. Hao, 2020a, p. 108).

			nucleus		
			centre		
discourse semantics	position >		figure		
			entity	+ quality	
(2.84)	*we*	*hypothesised*	*behavioural activation*	*is*	*cost-effective*
lexico-grammar	Med/Senser	P: mental	Medium/Carrier	P: attributive	Rg/Attribute
	n. gr	v. gr.	nominal group	v. gr.	adj. gr.

Although evaluated and positioned figures can be realised through clause complexes, they do not form figure sequences, which are the focus of Section 2.3.2. Instead, one clause expresses an *evaluation* of/a *position* on the figure realised through the other clause. These two types of augmentation are closely related to the interpersonal features found in ATTITUDE and ENGAGEMENT systems, which are reviewed in Section 2.3.3.

2.3.2 CONNEXION

CONNEXION (CONNEXION in Hao, 2020a; CONJUNCTION in Martin & Rose, 2007) deals with logical relations between figures (or "messages" in Martin, 1992) as the text unfolds. A distinction can be made between **external** and **internal** CONNEXION. On the one hand, external CONNEXION interacts with IDEATION, creating logically organised sequences (or "activity sequences" in Martin & Rose, 2007). This is exemplified in (2.85).

> (2.85) Interested applicants had to register on the study's secure website
>
> **and** complete an online screening.

Following Doran and Martin (2021), sequences are used to construe dynamic activity series at the field level (e.g., *register ^ complete* in (2.85)). On the other hand, internal CONNEXION interacts with PERIODICITY, creating logically organised waves of information (e.g., (2.86)).

> (2.86) We did modified intention-to-treat (mITT) and per-protocol (PP) analyses,
>
> **as** security of inference depends on both PP and intention-to-treat analyses.[21]

As illustrated in (2.86), the waves of information serve to scaffold a line of reasoning, which is crucial for organising field-constituting modes such as written academic text (Martin & Rose, 2007, 2008). To organise sequences/texts, both systems use the same four types of logical relations: "**adding** units together, **comparing** them as similar or different, sequencing them in [field or text] **time**, or relating them **causally** – as cause and effect, or evidence and conclusion"

(Martin & Rose, 2007, pp. 116–117, emphasis in original). Lastly, both external and internal connexions can be realised **explicitly**, or they can be left **implicit**.

Grammatically, explicit connexions can be realised congruently through conjunctions, which can be paratactic (e.g., *and*, *but*), hypotactic (e.g., *when*, *as*), or cohesive (e.g., *similarly*, *however*; following Halliday & Hasan, 1976). Within a clause, they can sometimes be realised through **continuatives** such as *also* or *too*. In scientific discourse, figure connexions are often construed metaphorically through verbs (e.g., *to cause*), nouns (e.g., *a cause*), adjectives/adverbs (e.g., *a resulting action*), or prepositions (e.g., *with an action*) (Halliday & Martin, 1993; Martin & Veel, 1998). Construing ideational metaphors, the logical subtype is always accompanied by instances of experiential metaphor (Martin & Rose, 2007). In (2.87), for instance, the logical metaphor is in **bold** and the experiential metaphor is *italicised*.

(2.87) The number of adverse events was compared

with [unpacked: **by**] *the use of* [unpacked: *using*] the Kruskal-Wallis test.

Following Martin and Rose (2007), CONNEXION analysis can be visualised using a diagram called a **reticulum**. A reticulum uses **dependency arrows** to show connexions, indicating the external/internal status by positioning the lines on the right (external) or left (internal). To facilitate interpretation, implicit connexions are inserted in parenthesis (see Fig. 53).
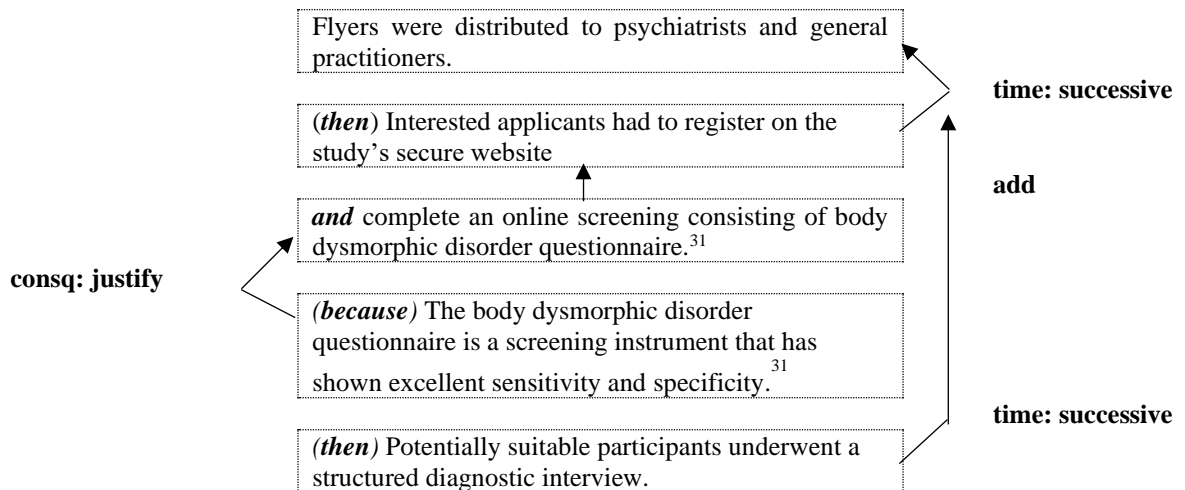
Figure 2.53: CONNEXION analysis of a sequence.

As an illustration, Figure 2.53 shows an external succession of occurrences, forming a sequence that construes the momented activity of *recruiting RCT participants*. Positioned on the right, there are two dependency arrows indicating the implicit external 'time: successive' (*then*) connexions. The arrow span also shows the scope of the realised connexion. For example, the occurrence *underwent an interview* succeeds the occurrences *had to register and complete*. As shown in Figure 2.53, the vertical arrows in the middle express local 'addition' (*and*) connexions so as to make temporal and causal connexions more visible (cf. Szenes, 2017). The

illustrated sequence also includes one instance of implicit internal 'consequence: justify' (*because*) connexion, which is indicated by the arrow on the left. In this case, the connexion is used to provide reasoning behind the use of *the body dysmorphic questionnaire* in the recruitment process.

To summarise, Figure 2.54 outlines the three simultaneous sets of options comprising the system of CONNEXION.
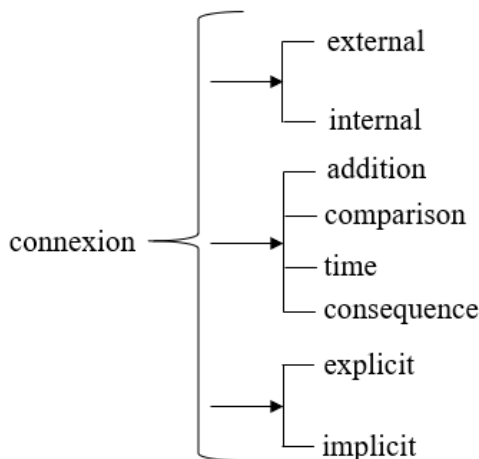
Figure 2.54: Basic connexion options (adapted from Hao, 2020a, following Martin (1992) and Martin and Rose (2007)).

The following sections elaborate on the connexion types that are relevant to an analysis of clinical psychology discourse.

2.3.2.1 External CONNEXION

As already mentioned, external connexions are used to form ideational sequences, which are oriented towards construing a dynamic perspective on field. In scientific discourse, external 'time' and 'consequence' connexions, which primarily link occurrence figures, play key roles in the construction of disciplinary knowledge (Halliday & Martin, 1993; Hao, 2020a, 2020b; Martin & Veel, 1998; Maton et al., 2021). Depending on the connexions and occurrences involved, sequences can construe activity series that unfold either in terms of expectancy or implication (Doran & Martin, 2021). At the field level, Martin (1992) models the concept of expectancy as **modalisation** (i.e., *activity A is likely to be followed by activity B*), whereas implication entails **modulation** (i.e., *activity A determines/implies activity B*).

According to Martin and Rose (2007), a distinction can be made between **simultaneous** and **successive** subtypes of external 'time' connexion, which are exemplified in (2.88-89).

(2.88) **When** ['time: simultaneous'] using this equation
we generated 25 datasets.

(2.89) **After** ['time: successive'] dosing was complete
patients were followed up until day 30.

In addition, (2.89-93) show that external 'consequence' connexions can be divided into the following subtypes: **cause** (e.g., *because/so*), **means** (e.g., *by*), **condition** (e.g., *if*), **purpose** (e.g., *in order to*), and **concession** (e.g., *although*).

(2.89) ***Because*** ['consq: cause'] MCC underwent accelerated recruitment

its sample was completed first.

(2.90) Treatment differences were tested

(***by***) ['consq: means'] using the Cox proportional-hazards regression models.

(2.91) Participants were excluded

if ['consq: condition'] they had received prolonged exposure therapy.

(2.92) The Young Mania Rating Scale was used

(***in order***) ***to*** ['consq: purpose'] assess mania or hypomania during the trial.

(2.93) ***Although*** ['consq: concession'] those patients no longer received the drug

outcome measures continued to be collected.

When reporting on experimental research, writers use 'time: successive/simultaneous' and 'consequence: means/purpose' connexions to combine enacted occurrence figures into **temporal sequences**, construing **facilitated activities** (Hao, 2020a). At the field level, facilitated activities can be momented in terms of expectancy, which is essential for the construction of procedural genres such as methodology recounts (Doran & Martin, 2021; Martin & Rose, 2008). For instance, Figure 2.55 displays a facilitation activity series realised through a temporal sequence that moments the activity of *selecting RCT participants*.
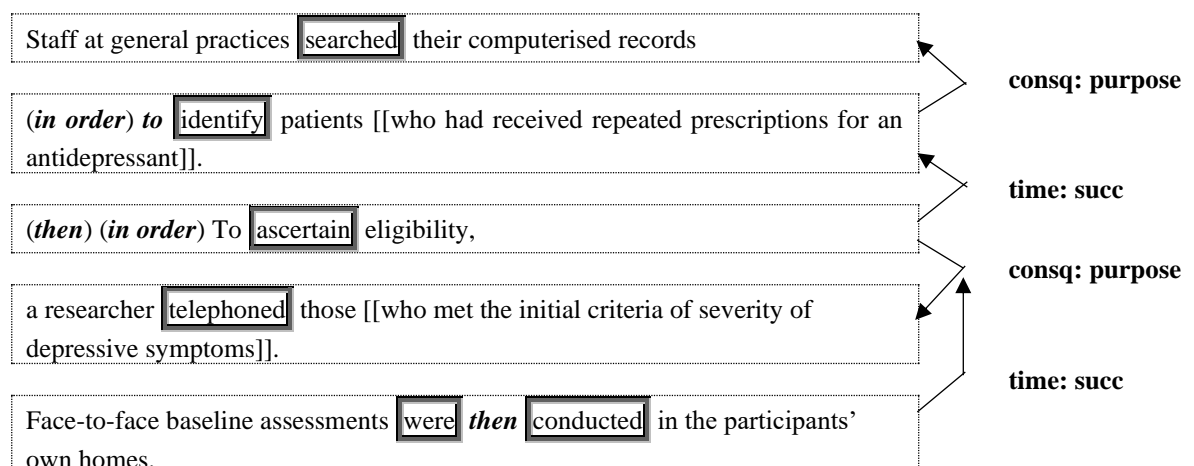
Figure 2.55: CONNEXION analysis of a temporal sequence construing a facilitated activity series (cf. Hao, 2020a, p. 146).

In Figure 2.55, the temporal sequence links five occurrences through two 'time: successive' (*then*) and two 'consequence: purpose' (*in order to*) connexions, construing a record of the *selection* activities (*searched ^ identified ^ telephoned ^ ascertained ^ conducted*). Furthermore, facilitation activity series can be construed by state figures with reconstrued enacted activities as co-elaborating entities (e.g., *RCT ← part ← participant selection*, *randomisation&masking*...

can be unpacked as RCT = *participant selection* ^ *randomisation&masking* ^ …). As mentioned in Section 2.3.1.2, unmomented facilitated activities can also be realised through enacted activity entities (e.g., *trial*).

In RCT methodology recounts, temporal sequences can be accompanied by **causal sequences** that outline the principles underlying a given enacted occurrence (see Chapter 4). This thesis argues that these sequences construe the field of **regulated activity series**, which can be momented in terms of implication (cf. Doran & Martin, 2021). At the genre level, regulated activity series are typically found in Records of *participant selection*. They are realised through causal sequences with 'consequence: condition' connexions, which list the occurrences/relations conditioning the enacted occurrence of *including/excluding applicants* (see Fig. 2.56).
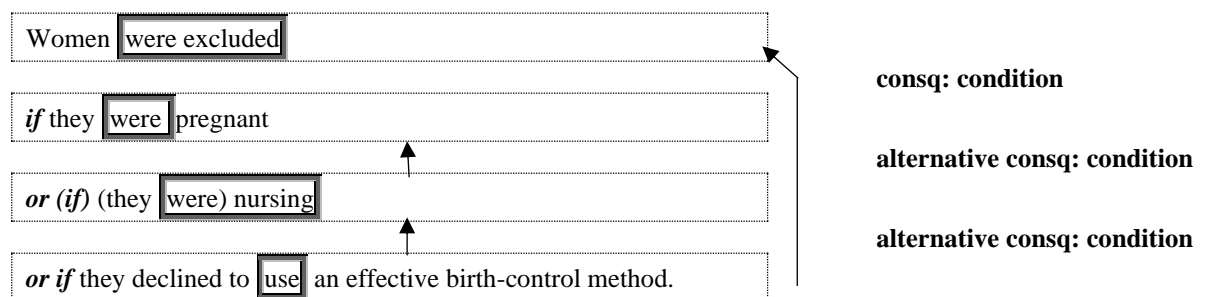
Figure 2.56: CONNEXION analysis of a causal sequence construing a regulated activity series (1).

In Records of *participants selection* and *outcome measurement*, regulated activity series can also be realised through state figures that co-elaborate an enacted activity entity with an observational activity or characteristic entity (e.g., *outcome measure* ← type ← *BDD II score of less than 10* can be unpacked as [IF] *BDD II score of less than 10* ^ [THEN] *outcome measure*). Furthermore, regulated activity series can be found in Protocol stages, which precede a given Record (see Chapter 4). This kind of causal sequencing combines 'consequence: purpose/means' connexions with modalised occurrences expressing obligation (see Fig. 2.57).
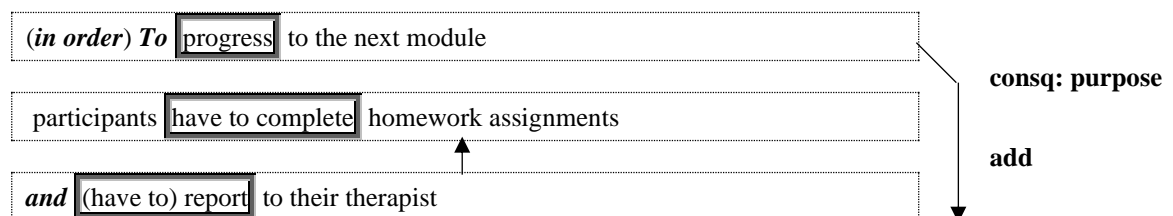
Figure 2.57: CONNEXION analysis of a causal sequence construing a regulated activity series (2).

In Figure 2.57, for example, the sequence uses 'consequence: purpose' to attach two requirements (*have to complete*, *have to report*) to the occurrence *progress*. When such causal sequences aim to direct prospective behaviour, they can construe regulated activity series that are characteristic of protocol genres (see Martin & Rose, 2008). In methodology recounts,

however, regulated activity series are used to scaffold the demonstration of scientific rigour and external validity of the adopted methodology.

To explain a scientific phenomenon, writers can also use 'time: successive' and 'consequence' connexions to combine present tense observed occurrences into causal sequences (Hao, 2020a). As these sequences foreground consequential relations, they construe **implication activity series** (Doran & Martin, 2021; Hao, 2020a). If unmomented, implicated activities can also be realised through reconstrued observational activity entities (e.g., *compulsion*; see Section 2.3.1.2) or 'semiotic: results' (e.g., *findings*). At the genre level, implication activity series are characteristic of scientific explanations (Martin & Rose, 2008; Rose & Martin, 2012; Unsworth, 2001). In clinical psychology discourse, implication series can be used to explain the links between specific biological/sociological phenomena and a given disorder. To illustrate, Figure 2.58 displays a causal sequence explaining the phenomenon of *post-partum depression*.
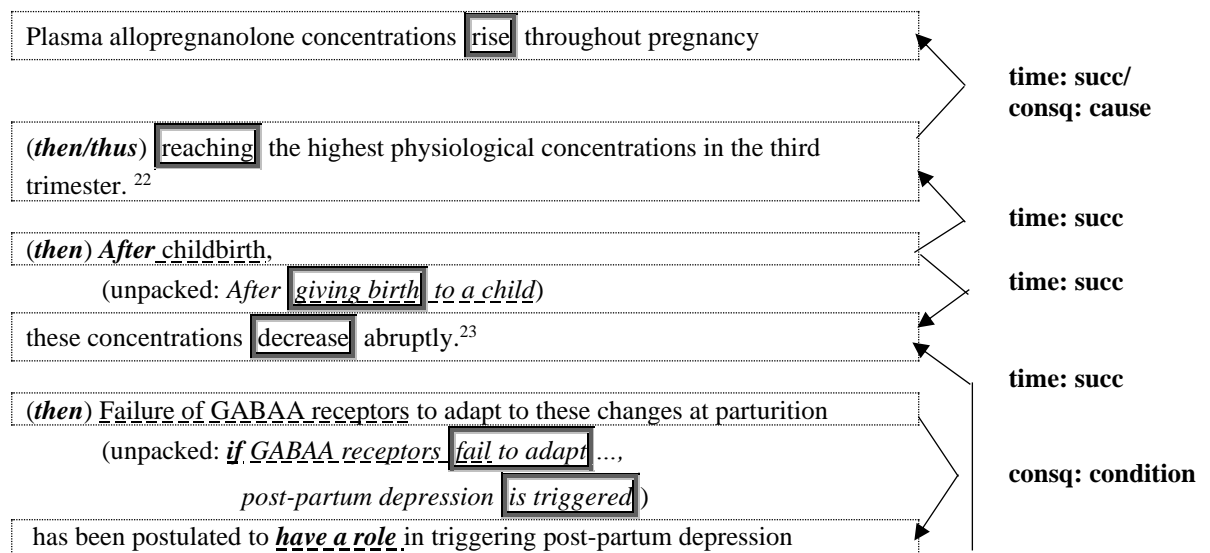
Figure 2.58: CONNEXION analysis of a causal sequence construing an implication activity series (cf. Hao, 2020a, pp. 151–152).

As indicated in Figure 2.58, within implication activities, implicit connexions can often be interpreted as either 'time: successive' (*then*) or 'consequence: cause' (*thus*) (cf. Hao, 2020a). Chronologically, however, both readings entail that one activity determines/implies the other.[34]

In conclusion, the exploration of clinical psychology discourse has revealed that sequences can construe facilitated, regulated, and implicated activity series. Following Doran and Martin (2021), both regulated and implicated activity series are momented in terms of implication, which is why it is necessary to establish more delicate criteria between the two types of implication in clinical psychology. Drawing upon Martin's (1992) concept of

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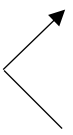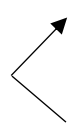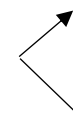
[34] In Hao (2020a), further distinction is made between implication activity series, which explain general principles (present tense), and observation activity series, which provide a record of what happened in an experiment (past tense). However, as observation activities are characteristic of the Results stage of an experiment report, they fall outside the scope of this thesis.

modulation, this thesis argues that regulated and implicated activity series can be distinguished with reference to the phenomena they modulate. While implicated series explain natural phenomena (e.g., *post-partum depression*) using the laws of nature (e.g., *body chemistry*), regulated activity series rely on artificial laws (e.g., *selection criteria*) to modulate social phenomena (e.g., *participant selection*). At the genre level, implication series are typically associated with explanatory genres, while regulated series can be related to protocols. Finally, artificial laws seem to be more susceptible to variation and/or change than those that are natural, which makes it possible for a regulated activity to be restricted to a particular spatio-temporal location or extent (e.g., study-specific principles).

2.3.2.2 Internal CONNEXION

Whereas external CONNEXION organises figures in field time, internal CONNEXION organises figures in text time (Martin & Rose, 2007). In other words, internal connexions are used to add (e.g., *furthermore*), compare (e.g., *similarly*) and order (e.g., *lastly*) arguments or evidence as the text unfolds. Furthermore, the presented arguments or evidence can be countered (e.g., *however*), or used to draw conclusions (e.g., *thus*) and provide justifications (e.g., *because*). In scientific discourse, internal 'consequence' connexions play a key role in scaffolding the reasoning leading to the extension of disciplinary knowledge (Halliday & Martin, 1993; Hao, 2020a; Martin & Veel, 1998).

According to Martin and Rose (2007), internal 'consequence' connexions can be divided into the following subtypes: **conclusion**, **justification**, and **concession** (e.g., (2.94-96)).

(2.94)   We did modified intention-to-treat (mITT) and per-protocol (PP) analyses,

as ['consq: justify'] security of inference depends on both PP and intention-to-treat analyses.[21]

(2.95)   Only 10-17% of people with body dysmorphic had received an empirically supported psychotherapy [19, 20]

Thus ['consq: conclude'], one of NICE's key priorities for implementation is currently far from reality.

(2.96)   The number of prescriptions for antidepressants has risen dramatically in recent years[2]

Many patients, *however* ['conq: concession'], do not respond to treatment.

It is argued that scientists use internal 'consequence' connexions to form causal sequences that construe **reasoning activity series** (Hao, 2020a). More precisely, the internal connexions (e.g.,

2.94-96)) are perceived as agnate to the combinations of an external connexion and a figure position or evaluation, as illustrated in (2.97-99) (following Martin, 1992).

(2.97) We did modified intention-to-treat (mITT) and per-protocol (PP) analyses,

as ['consq: cause'] *we know* security of inference depends on both PP and intention-to-treat analyses.[21]

(2.98) Only 10-17% of people with body dysmorphic concerns had received an empirically supported psychotherapy [19, 20]

Thus ['consq: cause'], *we argue* one of NICE's key priorities for implementation is currently far from reality.

(2.99) *Although* ['consq: concession'] the number of prescriptions for antidepressants has risen dramatically in recent years[2]

we argue many patients do not respond to treatment.

In clinical psychology RCT report Introductions/Methods, these sequences can be oriented towards justifying positions (i.e., why is something argued; e.g., (2.98-99)) or justifying enacted occurrences (i.e., why was something done, e.g., (2.97)). As shown in the above examples, justification in usually reinforced through the introduction of publication entities as the implied knowledge sources (e.g., [21] in (2.97)). Interpersonally, justification represents a valuable resource when negotiating the ethics and scientificity of an RCT (cf. "justification" in White, 2003). This is further discussed in Section 2.3.3.2.

At the genre level, internal causality is characteristic of argumentative genres (Martin & Rose, 2008; Rose & Martin, 2012). Therefore, internal CONNEXION is particularly relevant to a study of research warrants and the embedded expositions/discussions/challenges (see Section 2.2.3). As will be shown in Chapter 4, methodology recounts also rely on 'consequence: justify' connexions to negotiate the trial's scientific rigour and credibility. In addition, 'comparison: similarity: rework' (*i.e./e.g.*) and 'add' (*furthermore*) connexions enable the writers to elaborate on the performed steps, which is further reviewed in the discussion on PERIODICITY (see Section 2.3.4).

2.3.3 APPRAISAL

In SFL, the system of APPRAISAL deals with interpersonal resources that constitute "the language of evaluation" (Martin & White, 2005). Looking from "above" at the level of tenor, evaluative language is used to enact social relationships within a discourse community. In Martin and White's (2005) words,

> [APPRAISAL] is concerned with the construction by texts of communities of shared **feelings** and **values**, and with the linguistic mechanisms for the sharing of **emotions**, **tastes** and **normative assessments**. It is concerned with how writers/speakers

construe for themselves particular **authorial identities** and personae, with how they **assign** or **disalign** themselves with **actual and potential respondents**, and with how they construct for their texts **an intended or ideal audience** (p.1, emphasis added).

Being an interpersonal system, APPRAISAL is expressed through covariate prosodic structures (Martin, 1995, 1996; Martin & Rose, 2007; Martin & White, 2005). As discussed in Section 2.1.2, prosodic structures are suprasegmental, which means "a particular kind of meaning spreads out across a structure, colouring the unit as a whole" (Martin, 1995, p. 10). Throughout RCT report Introductions and Methods, for instance, writers use a range of APPRAISAL resources to reinforce a positive attitude to *their trial* as *justified* and *scientific*, rallying around the communal values of *ethics*, *scientific rigour*, and *credibility* outlined in the CONSORT Statement (Moher et al., 2010).

According to Martin and White (2005), APPRAISAL can be propagated through three types of evaluative prosody: **saturating**, **intensifying**, and **dominating**. Saturating prosody is defined as "opportunistic", which means that it "manifests where it can" (p. 19). Using interpersonal lexicogrammar as an example, (2.100) shows a saturation of modality (*possibility*) through a mental process (*suppose*), a modal verb (*may*) and a modal adjunct (*possibly*).

(2.100) I suppose this may possibly be true. (invented example)

As illustrated in (2.101), intensifying prosody uses repetition or loudness to make "a bigger splash which reverberates through the surrounding discourse" (p. 20).

(2.101) 'That,' said her spouse, 'is a lie' 'It's the truth,' said she. 'It's a dirty rotten stinking lousy bloody low filthy two-faced lie,' he amplified. (Martin & White, 2005, p. 20)

Lastly, dominating prosody "associates itself with meanings that have other meanings under their scope" (p. 20). This kind of prosody is associated with the peaks of information prominence scaffolding textual organisation (Martin & Rose, 2007; Szenes, 2017). Put simply, the evaluative stance in higher level Themes/News has the power to colour the reading of the text that succeeds/precedes it. This is reviewed in more detail in Section 2.3.4.

Following Martin and White (2005), APPRAISAL resources are organised into three simultaneous subsystems: ATTITUDE (i.e., feelings, judgements of people, and appreciation of things); GRADUATION (i.e., the adjustment of attitudes); and ENGAGEMENT (i.e., the sources of attitudes). The following sections provide a critical review of these resources and their use in written research communication.

2.3.3.1 ATTITUDE and GRADUATION

Within the ATTITUDE system, resources are further organised into three categories: **'affect'**, **'judgement'**, and **'appreciation'** (Martin & Rose, 2007; Martin & White, 2005). In addition,

attitudes can be: (a) **positive** ('+') or **negative** ('-'); and (b) **inscribed** (i.e., explicit) or **invoked** (i.e., implicit). These options can be formalised through a system network, as shown in Figure 2.59.
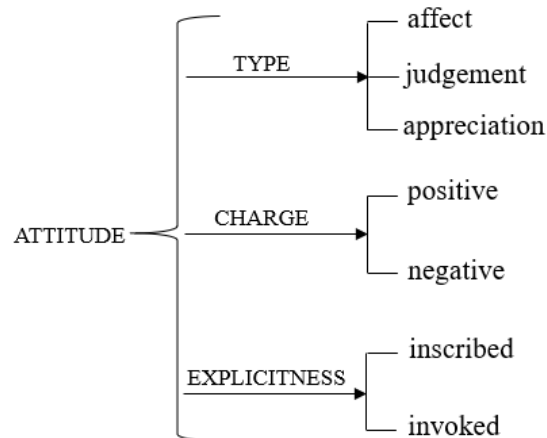
Figure 2.59: The system of ATTITUDE (following Martin & Rose, 2007).

'Affect' is concerned with linguistic resources that express positive/negative feelings or reactions with reference to: (a) '+/-**inclination**' (e.g., *patients wanted booster sessions*); (b) '+/-**happiness**' (e.g., *the participants liked the online support*); (c) '+/-**security'** (e.g., *the authors vouch*); and (d) '+/-**satisfaction**' (e.g., *participants were more satisfied)* (Martin & Rose, 2007; Martin & White, 2005). From the perspective of experiential discourse semantics (see Section 2.3.1), inscribed 'affect' is associated with affective qualities (e.g., *sad(ly)*), affective positions (e.g., *want*), or affective occurrences (e.g., *cry*), which are attributed to a people entity. Interpersonally, realisations of 'affect' involve a conscious Emoter, which can be accompanied by a Trigger, as exemplified in (2.102).

(2.102) **Patients** [Emoter] **wanted** ['+inclination'] booster sessions [Trigger].

In this thesis, the numbered examples annotate Emoters and instances of inscribed '+/-affect' with **black** and **pink** boldface, respectively (see (2.102)). It was hypothesised, however, that the instances of inscribed 'affect' would be rare in scientific discourses such as RCT report Introductions and Methods.

Furthermore, **'judgement'** deals with **Appraising tokens** (or "Appraising items" in Szenes, 2017) that construe positive/negative attitudes towards conscious **Targets**: people and their behaviours (Martin & Rose, 2007; Martin & White, 2005). There are two broad types of judgement, depending on whether they are concerned with **social esteem** or **social sanction**. Judgements of esteem are oriented towards: (a) '+/-**normality**' ('how special'; e.g., *ordinary/peculiar*); (b) '+/-**capacity**' ('how capable'; e.g., *expert/novice*); or (c) '+/-**tenacity**' ('how dependable'; e.g., *meticulous/reckless*). On the other hand, judgements of sanction focus on: (a) '+/-**veracity**' ('how honest'; e.g., *credible/dishonest*); or (b) '+/-**propriety**' ('how far

beyond reproach'; e.g., *ethical/ immoral*). Experientially, inscribed 'judgement' is associated with attitudinal qualities (e.g., *trained*) assigned to people entities (e.g., *nurses* in (2.103)).

(2.103) **Trained** ['+capacity'] **nurses** [Target] administered the tDCS regimen.

To annotate inscribed '+/-judgement', the numbered examples (e.g., (2.103)) in this thesis use **black** and **green** boldface to mark the Targets and Appraising tokens, respectively. As RCTs represent the gold standard for evaluating treatments in an unbiased manner, both the social esteem and the social sanction of clinical researchers are at stake (Boutron et al., 2008; Moher et al., 2010).

Finally, **'appreciation'** is concerned with Appraising tokens that construe positive/negative attitudes towards non-conscious Targets: things, performances, or natural phenomena (Martin & Rose, 2007; Martin & White, 2005). Realisations of 'appreciation' can be related to people's '**reactions**' to things, either in terms of '+/-**impact**' ('does it grab me?'; e.g., *moving/debilitating*) or '+/-**quality**' ('do I like it?'; e.g., *appealing/repulsive*). Furthermore, appreciations can be oriented towards **composition**, indicating either '**+/-balance**' ('does it hang together?'; e.g., *consistent/inconsistent*) or '**+/-complexity**' ('is it hard to follow?'; e.g., *simple/extravagant*). Lastly, appreciations can express '**+/-valuation**' ('what is its value?'; e.g., *significant/insignificant*). Looking from an experiential point of view, appreciation resources are associated with attitudinal qualities (e.g., *effective*, *complex*) assigned to entities realised through non-conscious participants (e.g., *CBT* in (2.104)).

(2.104) **CBT** [Target] is **effective** ['+valuation'], but **it** [Target] is **complex** ['-composition: complexity'].

As shown in (2.104), the numbered examples in this thesis annotate inscribed '+/-appreciation' by marking Targets and Appraising tokens with **black** and **blue** boldface, respectively. In academic discourse, appreciations tend to dominate the overall instances of inscribed attitude (Hood, 2004, 2006, 2010). For this thesis, appreciation resources (in particular, valuation) are of great interest as this research explores how RCT report Introductions and Methods use linguistic resources to ascertain that *the reported trial* (Target) is *justified*, *ethical*, *scientific*, and *reliable* ('+valuation').

According to Martin and White (2005), appreciation categories can also be interpreted metafunctionally and in terms of the mental processes that construe different types of position. Specifically, 'reaction' is related to affective positions (interpersonal significance at stake); 'composition' is associated with perceptive positions (textual organisation at stake); and 'valuation' is oriented to cognitive positions (ideational worth at stake). Unsurprisingly, this makes 'valuation' highly sensitive to field because "the value of things depends so much on our institutional focus" (Martin & White, 2005, p. 57). As a result, a number of studies on the use of evaluation have suggested more delicate valuation features that are field-specific (e.g.,

biology experimental reports in Hao & Humphrey, 2012; wine appreciation in Hommerberg & Don, 2015; the spoken interactions between postgraduate ESL students in Ngo & Unsworth, 2015). In a paper on evaluation in biology research warrants, for example, Hao and Humphrey (2012) propose five subtypes of **'valuation'**: '+/-**prominence**', '+/-**benefit**', '+/-**necessity**', '+/-**worthiness**', and '+/-**effectiveness**'. Be that as it may, this thesis does not distinguish among more delicate valuation features as the relatively small size of the dataset is likely to be insufficient to suggest a comprehensive typology of values that can be involved in the field of clinical psychology. That said, the thesis does rely on evaluative measured entity dimensions such as *efficacy* or *safety* (see Section 2.3.1.2) to name the parameters used for justifying the preference of one treatment over another (e.g., *the efficacy of antidepressants* vs. *the efficacy of CBT*). Notionally, these dimensions (e.g., *efficacy*) can be perceived as agnate to Hao and Humphrey's (2012) valuation types in biology (e.g., *effectiveness*).

Following the above discussion on attitude types, Figure 2.60 presents a systemic network with more delicate options than the system presented earlier in this section.
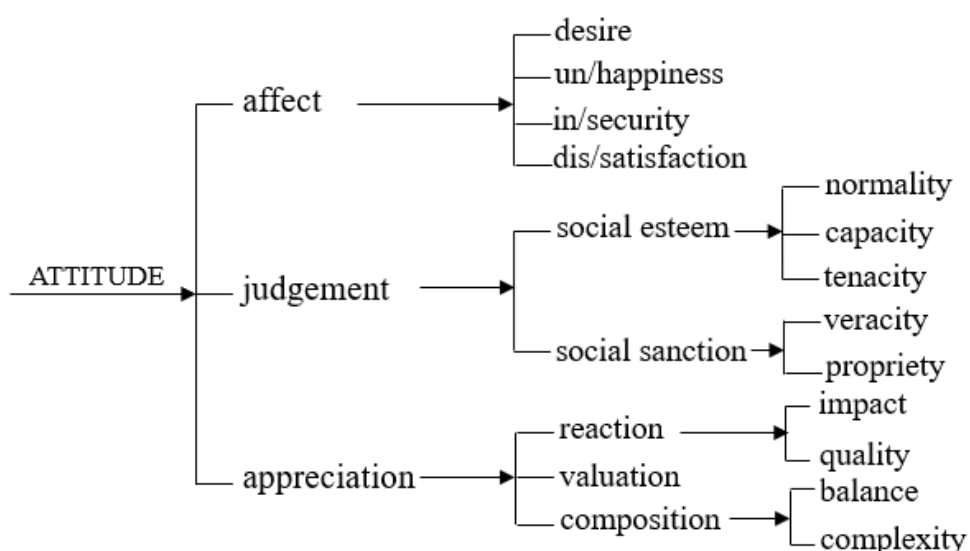
Figure 2.60: More delicate options for ATTITUDE (cf. Martin & White, 2005, p. 71).

As evaluation entails expressing "interpersonal attitudes to ideational experience" (Martin, 2004, p. 337), attitudinal meanings (e.g. *trained* ['+capacity']) are invariably "coupled" with ideational meanings (e.g. *nurses* [observer entity]). According to Martin (2010), the concept of **coupling** refers to the combinations of meaning resources across strata, metafunctions, ranks, and simultaneous systems. To visualise the coupling of interpersonal and ideational meanings (i.e., **evaluative couplings**), Hood (2010) suggests the use of yin/yang symbols (see, e.g., Fig. 2.61)).
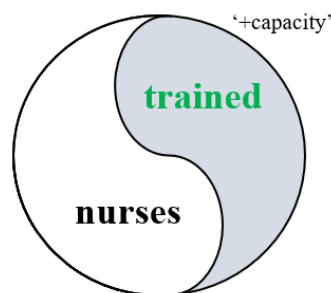
Figure 2.61: Coupling of interpersonal and ideational meanings (cf. Hood, 2010, p. 143).

The exploration of evaluative couplings has shown to be a fruitful line of enquiry into evaluative prosodies that are propagated in academic discourses. When it comes to research articles, the main focus has been on research warrants functioning as Introduction stages (Hao & Humphrey, 2012; Hood, 2010; Hood & Martin, 2005; Humphrey & Hao, 2013). This body of research has shown that evaluative strategies in research warrants typically vary depending on whether the targeted entity/occurrence construes: (a) the object of study; or (b) the field of study (or "field of research" in Hood, 2010). In the first case, attitudes are more likely to be explicit (i.e., inscribed) and even amplified to make the object of study more compelling (e.g., *PTSD can be debilitating*). In the second case, however, writers tend to graduate non-attitudinal meanings to **flag** (i.e., invoke) an attitudinal reading of what appears to be an objective representation of the field of study (e.g., *There is little research*). The positive and negative assessments of the field of study can be glossed as **burnishing** and **tarnishing**, respectively (Humphrey & Hao, 2013). Despite their differences, it can be concluded that all evaluative strategies indicate the importance of graduation resources in effective research communication.

The GRADUATION system is concerned with two kinds of scalability: **FORCE**, and **FOCUS** (Hood, 2010; Hood & Martin, 2005; Martin & Rose, 2007; Martin & White, 2005). On the one hand, FORCE accounts for the linguistic resources (i.e., **Graduating tokens**) aimed at **up-scaling/down-scaling** the **'intensity'** or **'quantity'** of experiential meanings. On the other hand, FOCUS deals with those resources that **sharpen/soften** the boundaries of experiential categories with reference to their **'valeur'** or **'fulfilment'** (following Hood, 2010; Hood & Martin, 2005). These graduation features are presented in Figure 2.62.
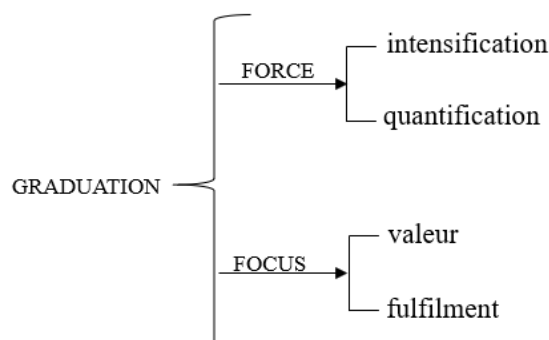
Figure 2.62: The system of GRADUATION (cf. Hood & Martin, 2005, p. 757).

Assessments of **'intensity'** are targeted at the ideational meanings that are inherently gradable (Martin & White, 2005). Following Hao's (2020a) modelling of experiential discourse semantics, these meanings include qualities, occurrences ("processes" in Martin & White, 2005), and figure evaluations through modality ("proposal" in Hood, 2010). The different types of intensification are exemplified in (2.105-2.108), with the Graduating tokens underlined and Targets in **bold**.

(2.105) … a **debilitating** ['intensified quality'; '-reaction: impact'] **disorder**.

(2.106) **Aripiprazole augmentation** is more ['intensified quality'] **efficacious** ['+valuation'].

(2.107) They [therapists] were closely ['intensified occurrence'] **supervised** by the lead author.

(2.108) It is **common** [intensified modality] [[to seek non-psychiatric care]].

As illustrated in the above examples, 'intensification' can be either infused into the meaning (e.g., *debilitating = very weakening; common = more than sometimes*) or added through modification (e.g., *more efficacious, closely supervised*). Furthermore, this kind of graduation can be used to intensify inscribed attitude (2.105-6) or flag an attitudinal reading of non-attitudinal meanings (2.107-8). In (2.106), for instance, the pre-modifier *more* 'intensifies' the inscribed '+valuation' of the enacted activity *aripiprazole augmentation* as *efficacious*. On the other hand, (2.107) uses the modifier *closely* to intensify the occurrence *supervised*, which is likely to position the reader to assign '+valuation' to the *supervision*. In turn, this should flag '+valuation' of the enacted activity *therapy* as *consistent* and *up to the standard*.

With reference to **'amount'**, **'quantification'** is concerned with imprecise "reckonings" of number (e.g., *many/a few patients*), or of mass and presence (e.g. a *considerable/small problem*) (Martin & White, 2005). Due to meaning reconstrual, a quantified 'amount' of activity entities can also be interpreted as 'intensification' via 'quantification' (e.g., *excessive camouflage → camouflage excessively*). In research warrants, amplifying the 'amount' of source entities (e.g., ...[1,2,3,4]) has been found to flag reliability and/or validity of a position (Hood, 2010; Hood & Martin, 2005; Humphrey & Hao, 2013). Conversely, down-scaling the 'amount' of the entities constituting the field of study (e.g., *few studies*) can flag '-valuation', thus warranting further research. Moreover, Hood (2010) argues that even specific numbers can be used to flag attitude "if there is co-textual support" (p. 95). As exemplified in (2.109), statistics play an important role in saturating and intensifying the negative impact that a disorder has on the society.

(2.109) a **debilitating** ['intensified -reaction: impact'] **disorder** [Target] that affected an estimated 16.1 million ['amount'] **adults**…

Another means of quantifying entities is with reference to their '**extent: time**' (e.g., *a long/short therapy*) or '**extent: space**' (e.g., *a global/local issue*) (Martin & White, 2005). Both 'extent: time' and 'extent: place' can quantify an entity in terms of its '**distribution**' ('relative coverage'; e.g., *long*, *global*) or '**proximity**' ('relative location'; e.g., *recent*, *close*). From an experiential perspective (following Hao, 2020a), these resources are typically associated with spatio-temporal qualities/characteristics (e.g. *a long therapy, US citizens*) or enhancing place/time entities (e.g. *people in the UK*). When it comes to research warrants, the graduation of 'extent: proximity: time/space' seems to correlate with the value that the targeted meaning carries for the writer's research and its target audience (Hood, 2010; Hood & Martin, 2005; Humphrey & Hao, 2013). For instance, *a recent study* on *PTSD outcomes in US military personnel* should be highly relevant to an RCT report that: (a) investigates combat-related PTSD in the US; and (b) aims to be published in an American journal such as *the Journal of the American Medical Association*. Similarly, scaling 'extent: distribution: time/space' can flag the relative importance of the object of study (e.g., *a global issue*) as well as the field of study (e.g., *a short trial*).

Figure 2.63 outlines a more delicate FORCE system, as discussed in this section.
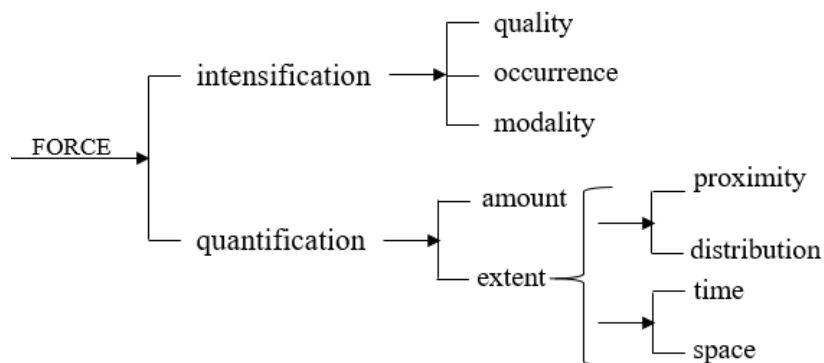
Figure 2.63: The system of FORCE (cf. Martin & White, 2005, p. 154).

Assessments of **focus** are concerned with sharpening and softening categorical (' either/or') experiential meanings (Hood, 2010; Hood & Martin, 2005; Martin & White, 2005). In their seminal book on the language of evaluation, Martin and White (2005) focus on degrees of '**valeur: authenticity**' (i.e., prototypicality) of entities, characteristics, and qualities. In (2.110), for example, the sub-modifier *truly* is used to sharpen 'valeur: authenticity' of the characteristic *random*.

(2.110) Participants were allocated on a truly ['valeur: authenticity'] **random** basis.

Hood and Martin (2005), however, note that academic research writing is primarily interested in narrowing/broadening '**valeur: specificity**' of phenomena (e.g., *general/particular*):

…reference to a narrowing of specificity of some phenomena may function to flag a positive value of relevance or a negative one of limitation. Similarly a broadening

of specificity may flag a positive value of broad applicability or a negative one of lack of definition (p. 755).

As will be shown in Chapters 3 and 4, 'valeur: specificity' is commonly used to flag '+capacity' of observers and '+valuation' of instrumental things in RCT reports. In other words, writers tend to specify the observer's expertise (e.g., *CBT therapist*) and the instrument's purpose (e.g., *BDD scale*) if they match the enacted activities (e.g., *CBT intervention*, *BDD outcome measurement*), which in turn flags reliability and credibility. From an experiential perspective, 'valeur: specificity' resources in clinical psychology appear to be associated with characterisation of entities.

In addition to 'valeur', it is argued that academic discourse can focus on two kinds of **'fulfilment'** so as to make the experiential boundaries of "processes" more malleable (Hood, 2010; Hood & Martin, 2005). Writers may focus on projecting processes such as *suggest* or *show*, which indicate a degree to which knowledge has been '**actualised**'.[35] Furthermore, verbal group complexes such as *tried to/managed to recruit* construe occurrences that can be graded in terms of '**completion**'.

Based on the above discussion, Figure 2.64 summarises the resources for graduating focus.
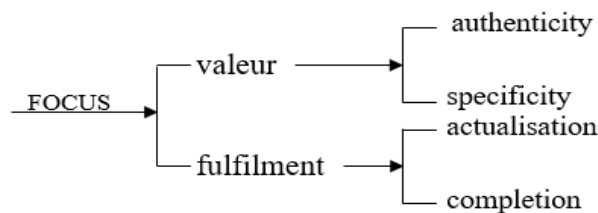
Figure 2.64: The system of FOCUS (cf. Hood & Martin, 2005, p. 755).

This section has reviewed appraising and graduating resources that can inscribe, intensify, or flag attitudinal readings. In this thesis, ATTITUDE and GRADUATION are used to analyse the propagation of evaluative prosodies that target the reported *RCT* (field of study) and the psychological outcomes under investigation (object of study). Although the APPRAISAL system provides the researcher with a principled way of coding, it is essential that the reading position is stated as it may influence coding decisions (Hood, 2010). For instance, academic community members may read the phrase *relatively few case studies* as invoking a negative evaluation of the existing research due to the low generalisability of small-scale studies. In this research, the analysis is positioned in relation to the meanings likely to be decoded by a member of the medical scientific discourse community. When exploring discourses in the fields such as law or clinical psychology, defining one's reading position is also critical because these discourses draw on attitudinal lexis to create **axiologically charged technicality** (hereafter

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[35] For a discussion on the use of projection to expand or contract dialogic space, see Section 2.3.3.2.

"axi-tech"). For instance, criminal offences (e.g., *murder* or *rape*) represent axi-tech in legal discourses, which means that they may invoke '-judgement' despite not expressing feelings *per se* (Martin & Zappavigna, 2016). Similarly, the medical terms for disorders such as *depression* or *anxiety* can be considered medical axi-tech in clinical psychology discourse (Stosic, 2021). Although many psychological disorder labels have been distilled from expressions of affect (e.g., *depressed = sad*), they represent medical terminology. When used in argumentative genres (e.g., research warrants), however, the attitudinal potential of axi-tech may be reclaimed through the use of graduating resources (Stosic, 2021). From the perspective of experiential discourse semantics, the distinction between inscribed affect and clinical psychology axi-tech is agnate to the difference between a quality and a characteristic (see Section 2.3.1).

2.3.3.2 ENGAGEMENT

Drawing upon Bakhtin's (1981) notions of **dialogism** and **heteroglossia**, Martin and White (2005) argue that all verbal communication is "dialogic". In their words, "to speak or write is always to reveal the influence of, refer to, or take up in some way what has been said/written before, and simultaneously to anticipate the responses of actual, potential or imagined readers/listeners" (p. 92). As mentioned in Section 2.2.3.3, interpersonal resources can be used to rally around the values and beliefs that are shared within a discourse community. To engage with the community, writers/speakers use language that indicates their stance (i.e., **dis/alignment**) on the value positions presented in the discourse. These linguistic resources are organised into the ENGAGEMENT system, which comprises two categories: **monogloss** and **heterogloss** (Martin & White, 2005).

Monoglossic propositions represent **'assertions'**, which do not acknowledge any alternative positions (or "voices") within the discourse (Martin & White, 2005). In (2.111), for instance, the fact that *BDD* is a type of *psychiatric disorder* is phrased as undisputed among clinical psychologists.

(2.111) BDD is a psychiatric disorder.

In RA Introductions, assertions are often accompanied by references to publication entities, which shows the existence of text-external voices agreeing with the author (i.e., 'co-voicing', P. R. R. White, personal communication, April 12, 2019). For example, (2.112) cites two publications ([1,2]) that support the proposition, enabling the writer to move from individual subjectivity to communal objectivity.

(2.112) Trauma-related nightmares and sleep disturbance are common symptoms of post-traumatic stress disorder (PTSD). [1,2]

Following Stosic (2021), propositions such as (2.112) are referred to as **'reinforced assertions'**. It is important, however, to emphasise that not every citation leads to a reinforced assertion for it is possible for a citation to simply refer the reader to an external source for further information. As shown in (2.112), the numbered examples in this thesis annotate reinforcement with black boxes.

In **heteroglossic** propositions, the writer/speaker introduces alternative voices by positioning themselves as dis/aligned with: (a) the previous utterances; or (b) the anticipated responses of the readers/listeners (Martin & White, 2005). Different types of heteroglossia can be grouped into two broad categories depending on whether they **contract** or **expand** the dialogic space. In the numbered examples, contracting heteroglossia is annotated with red boxes (see, e.g., (2.113-17)., whereas expanding heteroglossia is marked with green boxes (see, e.g., (2.118-19)).

Dialogic contraction is used "to challenge, fend off or restrict the scope" of alternative propositions (Martin & White, 2005, p. 102). These resources can be further divided into two categories: **'disclaim'** and **'proclaim'**. To disclaim a proposition, the writer/speaker can simply **'deny'** it through negation. This is exemplified in (2.113), which uses negation (*no*) to ward off any concerns regarding the influence of the funding body on the outcome of the reported RCT.

(2.113) The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report.

Alternatively, the writer/speaker may decide to **'counter'** a proposition with a counter-expectant alternative. In (2.114), for instance, the proposition that *the use of antidepressants is limited* counters the proposition that *they are cheap*.

(2.114) Although antidepressant medications are cheap, their use is limited by side-effects.

Looking from "around", countering resources are associated with concessive connexions such as *although* or *however*. While the disclaim features aim to reject or supplant opposing propositions, 'proclaiming' a proposition involves the use of resources that limit the scope of potential disagreement. To 'proclaim' a proposition in scientific discourse, writers tend to use **'pronouncement'** and, more frequently, **'endorsement'** features (Cheng & Unsworth, 2016; Humphrey & Hao, 2013). The discourse semantic category of 'pronounce' refers to "authorial interpolations or emphases" such as *we contend/must conclude that* (Martin & White, 2005, p. 127). To illustrate, (2.115) employs 'pronouncement' (*the authors vouch*) to confront any suggestion that *the data and analysis are not accurate and complete*.

(2.115) The authors vouch for the accuracy and completeness of the data and analyses reported.

Similarly, the category of 'endorse' refers to formulations such as *the study has shown/demonstrated*, which construe externally sourced (i.e., **extra-vocalised**) propositions as "correct, valid, undeniable or otherwise maximally warrantable" (Martin & White, 2005, p. 126). For instance, (2.116) 'endorses' *STAR*D trial*'s proposition that *bupropion is effective*, thus disaligning from alternative viewpoints.

> (2.116) STAR*D trial showed that bupropion was at least as effective as other switching[9] and augmenting agents.[9,10]

As can be seen in (2.115-16), 'pronouncement' and 'endorsement' resources are closely related to figure positions in experiential discourse semantics. While 'pronouncing' involves observers as source entities (e.g., *the authors* in (2.115)), 'endorsing' introduces trial-external enacted activities and/or publications (e.g., *STAR*D trial…[9,10]* in (2.116)).

In a paper on intersubjective stance, White (2003) introduces '**justification**' as a contracting heteroglossic feature. According to White, justification is inherently dialogic because it aims to fend off the opposing viewpoints through argumentation (see, e.g. (2.117)).

> (2.117) Thus, one of NICE's key priorities for implementation is currently far from reality.

As shown in (2.117), heteroglossic 'justification' resources are associated with connexions such as *thus* or *because*, which construe internal consequential relations.

Unlike dialogically contractive resources, **dialogic expansion** is oriented towards "opening up the dialogic space for alternative positions" (Martin & White, 2005, p. 103). Dialogically expansive resources can be divided into two semantic categories: '**entertain**' and '**attribute**'. When 'entertaining' a proposition, the writer/speaker uses resources that frame their position as only one of the possible viewpoints. For example, (2.118) uses 'entertainment' (*could*) to indicate that the proposition *a shorter therapy could hasten amelioration of PTSD* is open for negotiation.

> (2.118) A shorter course of therapy could hasten amelioration of PTSD.

From an experiential perspective, 'entertainment' resources are agnate to figure modifications (e.g., *it is possible…*) and positions with observers as sources (e.g., *we hypothesise…*). To expand a dialogic space through extra-vocalisation, the writer/speaker can use 'attribution'. As an illustration, (2.119) 'attributes' the proposition that *aripiprazole augmentation is more beneficial* to a trial-external source (*a recent study suggested*).

> (2.119) A recent study suggested aripiprazole augmentation is more beneficial than antidepressant switching.[14]

As is the case with 'endorsement', extra-vocalisation in 'attribution' is associated with experiential resources for figure positioning that involve trial-external enacted activities and/or

publications (e.g., *a recent study...[14]* in (2.119)). Unlike 'endorsing' resources, however, attribution positions the authorial voice as either neutral (e.g., *a recent study suggests* in (2.119)) or distanced (e.g., *a study claims...*) with reference to the extra-vocalied position. Accordingly, 'attribution' features can be divided into two subcategories: '**acknowledge**' and '**distance**'.

To summarise, Figure 2.65 presents the engagement features discussed in this section.
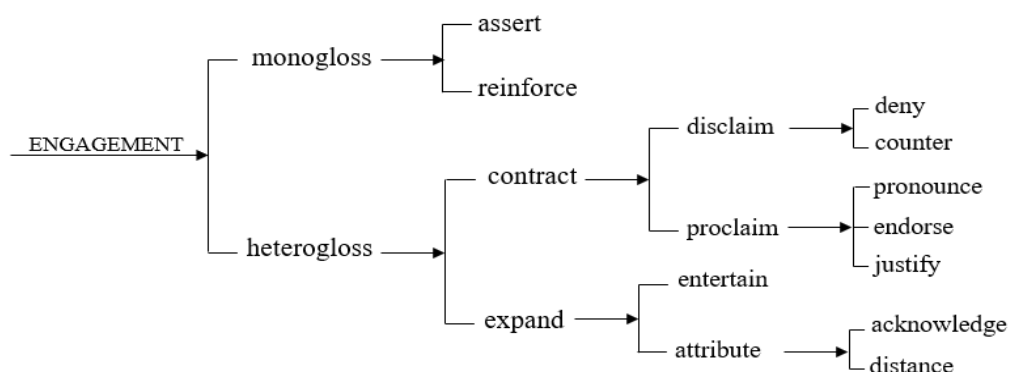
Figure 2.65: The system of ENGAGEMENT (following Martin & White, 2005; White, 2003).

As far as research articles are concerned, the concept of heteroglossia has provided SFL scholars with a powerful tool for investigating how writers "strategically mediate external voices and authorial utterances to negotiate the status of the knowledge claims" (Cheng & Unsworth, 2016, p. 47). In RA Introductions, 'endorsing' and 'countering' have been found to be critical resources, indicating the writer's dis/alignment with a view to warranting their research (Hood, 2010; Humphrey & Hao, 2013). Similarly, Cheng and Unsworth (2016) have shown that heteroglossic resources play an essential role when "negotiating academic conflict" in Discussion sections of RAs in applied linguistics. In this thesis, engagement resources are used to investigate how RCT report writers mediate external voices and authorial utterances to negotiate trial justification and scientificity.

2.3.4 PERIODICITY

The system of **PERIODICITY** accounts for the linguistic resources that regulate information flow. In other words, it is concerned with "the way in which [ideational and interpersonal] meanings are packaged to make it easier for us to take them in" (Martin & Rose, 2007, p. 188). Following Pike (1959), Martin and Rose (2007) model information flow using the "wave" metaphor (〰〰〰). The wave represents the idea that a discourse is organised around peaks and troughs of textual prominence (see Section 2.1.2). Furthermore, it is argued that smaller waves of information merge into bigger waves, forming a hierarchy of periodicity.

Within the smallest waves, textual prominence can be observed at the figure level through two kinds of textual prominence: **Theme** and **New** (cf. Halliday, 1979). According to Martin and Rose (2007, pp. 191–192), Theme represents a "point of departure", indicating the

field that is being built (e.g., *post-partum depression* in (2.120)); on the other end, New provides "the information we are expanding upon as text unfolds" (e.g., *a serious mood disorder* in (2.120)).

(2.120) Post-partum depression [Theme] is a serious mood disorder [New].

Looking at the lexicogrammatical stratum, Theme is realised through clause elements up to and including the participant that functions as the Subject; by contrast, New features are emphasised towards the end of the clause (see, e.g., (2.120)). In discourse semantic figures, recurrent Theme choices are used to provide continuity in the construal of a field, whereas shifts in Theme choices can be used to identify a shift in field. At the genre level, these shifts in field serve to scaffold staging within a generic structure (cf. shifting from the object of study to the field of research in Hood, 2010). In discourse, the Theme-New patterning can also be observed on a larger scale through the concepts of higher-level peaks of textual prominence: **hyper/macroThemes** and **hyper/macroNews**.

Traditionally treated as a "topic sentence", a **hyperTheme** "establishes expectations about how the text will unfold" (Martin & Rose, 2007, p. 194). More precisely, hyperThemes can be used to preview experiential meanings and set dominating evaluative prosodies. For instance, (2.121) shows (2.120) as the hyperTheme of the text describing *post-partum depression* and its *seriousness* ['-valuation'].

(2.121) **Post-partum depression** is a **serious** ['-valuation'] **mood disorder**. [hyperTheme]

(***that is***) ['similarity: rework'] Following delivery, post-partum depression is characterised by clinically significant depressive symptoms, often co-occurring with anxiety. ***Furthermore*** ['add'], post-partum depression is a leading cause of maternal mortality and, by affecting maternal functioning, poses serious risks to the emotional, cognitive, behavioural, and physical development of the infant and siblings. [elaboration]

As indicated in (2.121), the elaboration of hyperThemes is typically supported through internal connexions, which can be implicit (e.g., *that is*) or explicit (e.g., *furthermore*). As discussed in Section 2.3.2.2, internal 'addition' and 'comparison' can be used to add or compare/contrast arguments or evidence (e.g., *furthermore*; *similarly/by contrast*). In addition, the '**similarity: rework**' feature of internal 'comparison' enables writers to rephrase (e.g., *that is*), exemplify (e.g., *for example*), generalise (e.g., *in general*), or specify (e.g., *in particular*) what has been written.

While hyperThemes preview text, hyperNews can be used to "distill the new information that each [discourse] phase presents" (Martin & Rose, 2007, p. 193). To illustrate, (2.122) shows a text arguing for '+valuation' of the enacted activity entity *massed therapy*, which contains both the hyperTheme (*A shorter course of therapy could hasten amelioration of PTSD*) and the hyperNew (*Thus, mased therapy was expected to be noninferior…*).

(2.122) **A shorter course of therapy** could <u>hasten</u> ['extent: proximity: time'] **amelioration** ['+valuation'] of **PTSD**. [hyperTheme]

> (*e.g.*) ['similarity: rework'] Massed prolonged exposure therapy has been demonstrated to be as effective as weekly sessions for treatment of agoraphobia,[11] obsessive-compulsive disorder,[12] and panic disorder.[13,14] (*furthermore*) ['add'] A randomized clinical trial (RCT) in civilians with PTSD found 1 week of daily cognitive therapy equivalent to 3 months of weekly sessions.[15]

> ***Thus*** ['consequence: conclude'], **massed therapy** was expected to be **noninferior** ['+valuation'] to typical spaced prolonged exposure therapy. [hyperNew]

As marked in (2.122), the hyperNew is typically signalled by the internal 'consequence: conclude' (*thus*) connexion.

In discourse, hyperThemes are more common than hyperNews because "writing looks forward more often than it looks back" (Martin & Rose, 2007, p. 195). Moreover, higher level Themes and News are typically used to organise written modes, which tend to involve more careful planning than everyday spoken modes. In fact, longer pieces of writing such as research articles are likely to involve several layers of hyperThemes/News, with those at the highest level referred to as **macroThemes/News**. For example, Szenes (2017) argues that introductory and concluding sections in undergraduate business reports function as macroThemes and macroNews, respectively. A layered structure of Themes and News in discourse is illustrated in Figure 2.66.
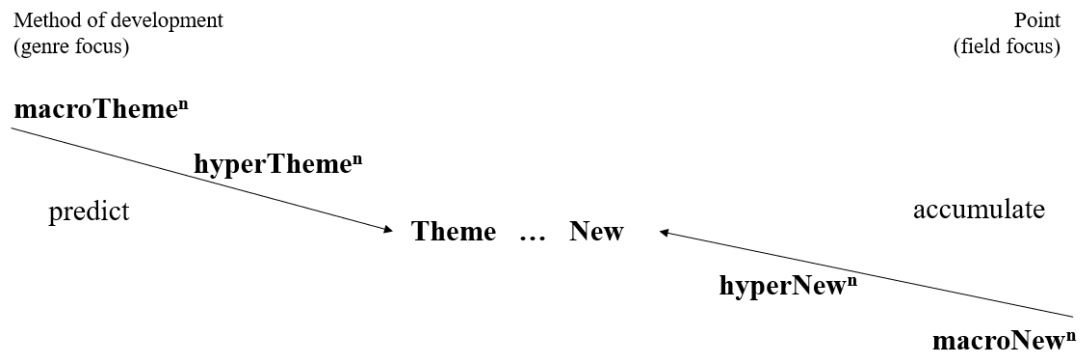
Figure 2.66: Layers of Themes and News in discourse (adapted from Martin & Rose, 2007, p. 199).

In experimental reports, it is also common to use semiotic entities (e.g. *introduction*) as (sub)headings "to name chunks of text" (Hao, 2020a, p. 67). Following Martin and Rose (2007), headings represent an important resource for construing hierarchies of periodicity. As the CONSORT Statement strongly encourages the use of subheadings in RCT Methods (Moher et al., 2010), (sub)headings can provide a useful insight into the structure of methodology recounts.

In this thesis, PERIODICITY is used to investigate the organisation of ideational and interpersonal meanings. More precisely, the research explores how RCT report writers use layers of Themes/News to establish and consolidate a strong scientific base for their contribution to the medical discourse community.

2.4 Exploring the scientific foundation in clinical psychology RCT reports

So far, this chapter has reviewed those aspects of SFL theory that underpin the research presented in this thesis. In this section, these theoretical foundations are related to the specific focus of this study – namely, a genre-based investigation of Introduction and Method sections in clinical psychology RCT reports. Accordingly, this section specifies the research questions before explaining the principles used for data selection and analysis.

2.4.1 Research questions

As mentioned in Chapter 1, the primary motivation of this thesis is to explore how writers of RCT reports use language to construe a sound scientific base for their contribution to the field of clinical psychology. According to the CONSORT Statement, "pre-Results" RCT report sections need to demonstrate that the performed trial is justified and that its methodology meets the "gold standard" for evaluating treatments (Moher et al., 2010). However, Moher et al. do not provide RCT report writers with any guidelines on how these goals can be achieved effectively through language. Therefore, this research aims to provide a linguistic description of how trial justification and scientificity are construed in the RCT report sections that precede the presentation of new findings. In other words, this thesis is guided by the following research question (RQ):

- RQ: What is the nature of Introduction and Method sections in clinical psychology RCT reports?

Drawing on the SFL theoretical framework, the deconstruction of RCT report Introductions and Methods has been divided into two complementary lines of inquiry:

- RQ1: What kind of generic structure do Introductions and Methods have and how do these structures enable the writer to achieve their communicative goals?
- RQ2: Which ideational, interpersonal, and textual language resources play important roles at different generic stages and how do they interact?

To answer RQ1, this study builds on the SFL-based "Sydney School" approach to genre. As discussed in Section 2.2.3, this analytical framework defines genre as a "staged, goal-oriented, purposeful activity" in which language plays a crucial role (Martin & Rose, 2008; Rose & Martin, 2012). In this thesis, it is hypothesised that RCT report writers rely on their previous training in writing scientific and research genres to construe an effective justification of their trial and demonstrate the ethics, scientific rigour, and credibility of their methodology.

To conduct a multi-functional discourse semantic analysis, as outlined in RQ2, this study employs the SFL systems of IDEATION (see Section 2.3.1), CONNEXION (see Section 2.3.2), APPRAISAL (see Section 2.3.3), and PERIODICITY (see Section 2.3.4). The primary goal of

exploring Introductions and Methods at a lower level of abstraction is to make the identified generic patterns more visible to language trainers and novice researchers (cf. Dreyfus et al., 2015; Hao, 2020a; Humphrey & Dreyfus, 2012; Martin & Rose, 2007; Rose, 2006; Szenes, 2017). As discussed in Sections 2.1.2 and 2.2.3.3, this thesis uses the concept of register variables (i.e., field, tenor, and mode) to relate language patterns to the social practices involved in the construal of a sound scientific base for medical knowledge extension (Doran & Martin, 2021; Hood, 2010; Martin, 1992; Martin & Rose, 2008).

The primary concern of this thesis is a linguistic deconstruction of Introductions and Methods in clinical psychology RCT reports, which is the focus of Chapters 3 and 4. Thus, this study is more oriented towards the instance pole along the cline of instantiation (see Section 2.1.5). Accordingly, it draws on Hasan's GSP model to generalise about the identified structures with reference to obligatory/optional stages and their sequencing/recursion (see Section 2.2.2).

As SFL represents an empirical approach to language description, the findings of this study are also used to make important contributions to "Sydney School" genre theory and ideational discourse semantics. As reviewed in Section 2.2.4, this thesis proposes a two-rank generic scale to strengthen the argument for genre embedding as a means for expanding the meaning potential of genres (cf. Martin, 1994, 1995, 1996; Szenes, 2017). Furthermore, Sections 2.3.1.2-3 and 2.3.2.1 used the empirical data to extend Hao's (2015, 2020a) recently developed typology of ideational discourse semantic resources (i.e., entities, figures, and sequences) in biology experimental reports. The decision to include the study's theoretical contributions in this chapter is motivated by the fact that they are critical to the interpretation of the findings presented in Chapters 3 and 4.

2.4.2 Data collection and analysis

As this study involves a multi-stratal and multi-functional analysis of meaning-making resources, the quantity and quality of data needed to be chosen carefully and strategically to "balance the productivity and labour" (Hao, 2020a, p. 49).

To ensure the representativeness, quality, and comparability of data, this research project only considered research articles that:
- were published between 2016 and 2018 in one the four highest ranked medical journals (2017 rankings, www.jcr.clarivate.com):
  - o NEJM – New England Journal of Medicine (impact factor: 79.26)
  - o The Lancet (impact factor: 53.25)
  - o JAMA – Journal of the American Medical Association (impact factor: 47.66)
  - o BMJ – British Medical Journal (impact factor: 23.56)

- are classified as RCT reports on the effectiveness of treatments for depression, anxiety, or related psychological disorders such as post-traumatic stress disorder (PTSD) or body dysmorphic disorder (BDD); and

- contain the Introduction-Methods-Results-Discussion structure, adhering to *the Consolidated Standards for Reporting Trials (CONSORT) Statement* (Moher et al., 2010).

As mentioned in Chapter 1, the decision to focus on the topics of depression and anxiety was influenced by that fact these psychological disorders are the leading cause of the global burden of disease in terms of years lived with disability (Vigo et al., 2016; Whiteford et al., 2013).

In total, 15 RCT reports were identified and given unique codes combining the journal name – NEJM, LANCET, JAMA, or BMJ – and a number (NEJM-1/2, LANCET-1/2/3/4/5, JAMA-1/2/3/4/5/6, BMJ-1/2; see Appendix 1). As mentioned in Section 2.1.6, this thesis deals with the logogenetic unfolding of generic structure and discourse semantic resources in "pre-Results" RCT report sections. Thus, Introduction and Methods sections were extracted from all the identified RCT reports to create a dataset for this study. The dataset of 15 RCT report Introductions consists of 5,409 words, while the dataset of 15 RCT report Methods comprises 26,831 words.

To answer the RQs, this research used a two-staged process, which involved a preliminary analysis of the entire dataset followed by an in-depth analysis of a narrowed dataset. In the preliminary analysis, the sampled Introductions and Methods were analysed with reference to their global generic structures. This analytic step was oriented towards identifying the nature of the generic units that function as Introduction and Methods stages (see Appendix 2). Then, the dataset was narrowed to eight Introductions and eight Methods to conduct an in-depth study of additional layers of genre embedding and discourse semantic features (for sample analyses, see Appendices 5-10). To allow for a balanced representation, each journal accounts for two Introductions/Methods in the narrowed dataset (see Appendix 1). Among the eight Introductions/Methods, four belong to the reports that test the effectiveness of pharmacological treatments and four have been extracted from the reports that focus on at least one non-pharmacological treatment. In total, the narrowed dataset consists of 16,936 words (Introductions: 3,152 words; Methods, 13,784 words).

Due to the relatively small size of the dataset, some concerns may be raised by quantitative researchers regarding the generalisability of its findings. It must be highlighted, however, that this study has adopted a qualitative methodology which puts emphasis on the depth rather than breadth of its analysis. To reiterate, the study deconstructs clinical psychology RCT report Introductions and Methods to understand how writers use language to construe a sound scientific base for medical knowledge extension, which entails trial justification and a

demonstration of its scientificity. The results of this study are presented and interpreted in Chapters 3 and 4. They carry important pedagogical implications and make significant theoretical contributions, which will be revisited in the concluding Chapter 5.

Chapter 3 Deconstructing Introductions in clinical psychology RCT reports

This chapter presents the findings on the generic structure and discourse semantic features of RCT report Introductions. Section 3.1 describes the results of the preliminary analysis investigating the nature of the embedded research warrant genre realising the Introduction stage across the entire dataset (n=15). Sections 3.2 – 3.4 present the findings of the in-depth genre and discourse semantic analyses of individual research warrant generic stages found in the narrowed dataset (n=8). These sections also elaborate on the use of additional layers of genre embedding that build "depth" to warranting new research. Lastly, Section 3.5 summaries the findings of both preliminary and in-depth analyses from an axial perspective.

3.1 The 'research warrant' genre

According to the CONSORT Statement (Checklist item 2), the Introduction must justify the reported trial as it is "unethical to expose humans unnecessarily to the risks of research" (Moher et al., 2010, p. 4). In the preliminary analysis, all 15 Introductions were found to be realised by an embedded research warrant genre (cf. research warrant in Hood, 2010; Humphrey & Hao, 2013). This argumentative genre is oriented towards the object of study – *depression and/or anxiety outcomes* – as well as the field of study – *medical outcome research*. To investigate its staging, this section begins with a highly abridged research warrant genre functioning as the Introduction stage in JAMA-1, which reports on a trial of antidepressant augmentation and switching strategies in treating resistant depression (see Table 3.1).

Table 3.1: The abridged research warrant genre functioning as Introduction in the JAMA-1 RCT report.

Staging	Text (JAMA-1)
INTRODUCTION [[research warrant]]	Introduction
Topic significance	Given that less than one-third of patients with a debilitating MDD [major depressive disorder] achieve remission with their first course of antidepressant pharmacotherapy,[3,4] an estimated 10.8 million US residents may benefit from an alternative treatment each year.
Evidence	STAR*D trial showed that bupropion was at least as effective as other switching[9] and augmenting agents.[10] However, STAR*D was not powered to compare bupropion switching and augmentation strategies.[11] Several studies have shown efficacy of aripiprazole as an antidepressant augmentation strategy.[13] However, adequately powered and well-controlled clinical trials have yet to compare the effectiveness of these 2 treatments.
Response	The primary objective of this randomized clinical trial was to compare the effectiveness and adverse effect profiles of 3 commonly used alternative MDD treatment strategies: switch to the antidepressant bupropion sustained release; augment current treatment with bupropion sustained release; or augment current treatment with the antipsychotic aripiprazole.[15]

As shown in Table 3.1, research warrants begin with a generic component that functions as the Topic significance stage. This stage aims to build the field of the itemised property *disorder*, which represents the object of study (e.g. [*resistant*] *major depressive disorder (MDD)*). Adopting a static field perspective, it is concerned with the disorder with reference to its social impact. When it comes to enacting social relationships (i.e., tenor), this stage is persuasive to a large extent, employing evaluative language to establish the importance of conducting further research on disorder management. As can be seen in Table 3.1, JAMA-1's writer wishes to convince the medical discourse community of the need for studying treatments for resistant *MDD* by negatively evaluating the disorder (*debilitating*) and its first-line treatment (*less than one-third of patients achieve remission*).

After establishing topic significance, research warrants introduce one or more generic components that function as Evidence stages (see Table 3.1). The purpose of an Evidence stage is to provide a rationale for pursuing or abandoning a particular line of enquiry. In traditional terms, Evidence stages are aimed at creating an important research gap by identifying the benefits and/or drawbacks of:

- current evidence-based disorder treatments (i.e., the object of the study); and
- existing guidelines and/or research on the effectiveness of interventions (i.e., the field of study).

Throughout Evidence stages, the object of study continues to be built and assessed to warrant new research. In Table 3.1, JAMA-1's Evidence assigns the positive property *effective* to the items investigated in the reported trial - *bupropion* and *aripiprazole*. However, what differentiates Evidence from Topic significance is its explicit inclusion and review of the general field of study, which refers to the (itemised) activities involved in the process of improving medical practice (e.g., *trials*). In other words, while Topic significance only refers implicitly to the field of study via footnote referencing (e.g., [3,4] in (3.1)), Evidence states the guidelines and/or existing research explicitly (e.g., *STAR-D trial* in (3.2)).

> (3.1) Topic significance: … less than one-third of patients with a debilitating MDD achieve remission with their first course of antidepressant pharmacotherapy,[3,4]…
> (JAMA-1)

> (3.2) Evidence: STAR*D trial showed that bupropion was at least as effective as other switching[9] and augmenting agents.[10] However, STAR*D was not powered...
> (JAMA-1)

The latter realisational pattern enables the RCT report writer to outline and negotiate different positions on the object of study as well as evaluate the field of study. To illustrate, (3.2) uses the itemised activity *STAR*D trial* as the source of positive assessment (*STARD*D trial showed...*) as well as the target of negative evaluation (STAR*D was *not powered*…).

Finally, research warrants end with a generic component that serves as the Response stage (see Table 3.1). This stage is used to introduce the writer's itemised activity *trial* as the specific field of study. The trial is represented as a logical course of action in response to the pressing needs of the medical discourse community. For example, JAMA-1's trial of *bupropion/aripiprazole switching and augmentation treatments in treating persistent MDD* is justified because:

- resistant MDD is a prevalent and serious problem (*debilitating, 10.8 million US residents*);

- the investigated treatments have shown potential (*efficient in STAR*D/several studies*)

- the existing evidence on the investigated treatments has limitations (*not adequately powered or well-controlled*).

As a summary, the generic structure of JAMA-1's research warrant can be illustrated using a tree diagram, as shown in Figure 3.1.
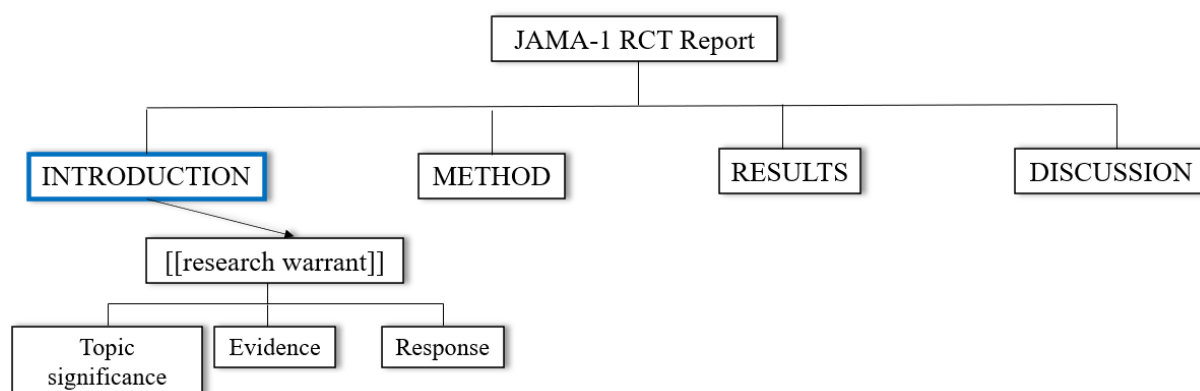
Figure 3.1: A tree diagram of the generic structure of JAMA-1's Introduction stage: the first-order genre embedding.

The stages identified in JAMA-1 are characteristic of the entire dataset of 15 sampled Introductions. All introductory stages are construed by an embedded research warrant genre that starts with a Topic significance stage, which is followed by one or two Evidence stages and a Response stage. As shown in JAMA-1's research warrant, these stages can be realised by generic components that are categorically different from one another, which allows for a typological system network to be drawn (see Fig. 3.2).
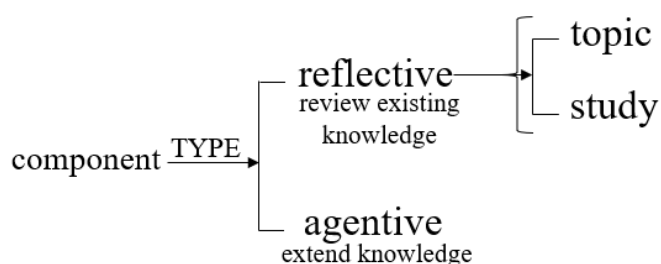
Figure 3.2: Generic component types realising stages in research warrants functioning as RCT report Introduction stage.

According to the preliminary analysis, a distinction can be made between **reflective** and **agentive** generic components. Although the role of language (i.e., mode) in research warrants can be described as predominantly reflective, there appears to be a slight shift occurring at the onset of the final stage. As a participant in the knowledge building process, the RCT report writer transitions from reflecting on the community knowledge to introducing their action aimed at medical knowledge extension. Thus, this study argues that Topic significance and Evidence stages can be construed by reflective components, whereas a Response stage can be construed by an agentive component. Among reflective components, a more delicate categorisation can be introduced in terms of field focus: in Topic significance, research warrants reflect on the **topic** (i.e., object of study); in Evidence, they reflect on the **topic** as well as the field of **study**.

This section has outlined the staging of the research warrant genre functioning as Introduction in clinical psychology RCT reports. Although construed by different generic components, all research warrant stages tend to put equal emphasis on the epistemology and axiology of knowledge building. Put simply, they deal with the following questions:

- Topic significance: What is the topic? Why is it important for the discourse community?
- Evidence: What has the discourse community done to address the topic? What are the advantages and disadvantages of pursuing a particular body of research?
- Response: What did the writer do in response to the existing knowledge? Was their action appropriate and justified?

Therefore, in terms of tenor, the preliminary analysis found that the three stages work jointly to negotiate the value of the specific field of study – namely, the reported RCT. According to Hood (2010), this is likely to activate a close interaction between ideational and interpersonal language meanings through evaluative couplings, which was the main focus of the subsequent in-depth analysis.

Based on the in-depth analysis of the narrowed dataset of Introductions, the following sections showcase:

- the salient discourse semantic features of individual stages; and
- the additional layers of genre embedding found in Topic significance and Evidence stages.

3.2 The Topic significance stage

As established in the preliminary analysis, all research warrants begin with a Topic significance stage construed by a reflective (topic) generic component. A subsequent study of the narrowed dataset, however, suggests that RCT report writers tend to supplant this component with an

embedded descriptive report on the itemised property *disorder* (100% of the identified Topic significance stages). This finding is in agreement with Hood's (2010) claim that research warrants start with a descriptive report on the object of study. Within the research warrant, the embedded descriptive reports were found to represent macroTheme, introducing the topic under investigation and establishing its significance.

To investigate the internal structure and discourse semantic features of the embedded report, this section starts with the abridged Topic significance in BMJ-1's research warrant. As shown in Table 3.2, this stage realisation is construed by an embedded descriptive report on *body dysmorphic disorder (BDD)*, which comprises two stages: Classification and Description.

Table 3.2: The abridged Topic significance stage in the research warrant of BMJ-1.

Topic significance *[[[[descriptive report]]]]*	Text (BMJ-1)
Classification *definition (disorder)*	Body dysmorphic disorder (BDD) is a psychiatric disorder characterised by preoccupation with perceived defects in physical appearance accompanied by compulsive behaviours.[1]

Description
    effects
    prevalence
    treatment
	BDD is associated with functional impairment and psychiatric admissions to hospital.[2-4] Its prevalence ranges from 0.7% to 2.2% in the general population.[7-10] It is common for those with BDD to seek dermatological treatment or plastic surgery; however, such interventions can lead to a deterioration of symptoms.[11,12]

Ideationally, the initial Classification is realised by a present tense co-elaborated state figure, which provides a generalised *definition* of the characteristic entity *BDD*. To classify the object of study, BMJ-1's writer establishes a taxonomic relationship between *BDD* and the characteristic entity *psychiatric disorder* (*BDD* → type → *psychiatric disorder*). Further defining *BDD*, *psychiatric disorder* is qualified via an embedded clause that lists specific diagnostic criteria (see (3.3)).

(3.3) [[characterised by preoccupation with perceived defects in physical appearance accompanied by compulsive behaviours]]

In (3.3), the correlation *characterised by* links the characteristic *BDD* to the elements that constitute the semiotic proof *symptom.* These include the metaphorically expressed observational occurrence *preoccupation* and the observational activity entity *compulsive behaviour* (*preoccupation…, compulsive behaviours* → type → *BDD symptom*).

Following Classification, the Description stage consists of three descriptive phases that elaborate on *BDD effects*, *prevalence*, and *treatment*. To identify *BDD effects*, BMJ-1's writer uses another correlation (*be associated with*), which relates *BDD* with the characteristic entity *functional impairment* and the activity entity *psychiatric admission* (see (3.4)).

(3.4) BDD is associated with functional impairment and psychiatric admissions to hospital.

To specify *BDD*'s measured dimension *prevalence*, an extended state (*range*) figure is employed to assign percentage (see (3.5)).

(3.5) Its prevalence ranges from 0.7% to 2.2%...

To elaborate on a possible *treatment*, the evaluation of the (3.6) figure (*it is common*) is employed to highlight modality of the activity entities *dermatological treatment and plastic surgery* (see (3.6)).

(3.6) It is common for those with BDD to seek …

Finally, a metaphorically realised instigation is used to link *such interventions* with *a deterioration of symptoms* as a metaphorically expressed observational occurrence (see (3.7)).

(3.7) such interventions can cause symptoms to deteriorate

Among the descriptive reports construing Topic significance in the narrowed dataset, the Classification stage was found to be optional, only appearing in BMJ-1 and LANCET-2's research warrants. Like BMJ-1, LANCET-2 introduces the disorder under investigation by *defining* it in terms of its diagnostic criteria, as shown in (3.8).

(3.8) Severe post-partum depression is defined as a major depressive episode in the post-partum period with marked impairment in functioning in both the International Classification of Diseases (ICD)-10 and Diagnostic and Statistical Manual of Mental Disorders (DSM)-5. (LANCET-2)

Although a larger corpus study is required to further investigate the meaning behind the writer's choice to include a definition, the findings suggest that the specificity of the disorder and the attention it has received in medical research/practice may have influenced this decision. On the one hand, BMJ-1 argues that *body dysmorphic disorder* is underdiagnosed by mental health providers, which implies a presumption that the readership needs a clear definition of this *psychiatric disorder*. Similarly, a definition of *severe post-partum depression* in (3.8) serves to exclude any other form of *a major depressive episode* from the topic. On the other hand, the omission of Classification in the remaining six research warrants, which investigate either *depressio*n or *post-traumatic stress disorder (PTSD)*, indicates an expectation that the medical discourse community is familiar with the definitions of these objects of study.

As is the case with the BMJ-1's descriptive report on *BDD*, the in-depth generic analysis revealed that all Description stages consist of three descriptive phases that elaborate on the object of study with reference to:

- *symptoms/effects*,

> (3.9) Trauma-related nightmares and sleep disturbance are common symptoms of post-traumatic stress disorder.[1,2] (NEJM-2)

- *prevalence*,

> (3.10) Post-traumatic stress disorder (PTSD) affects 10% to 20% of military personnel returning from deployments to Iraq and Afghanistan. (JAMA-2)

- and *treatments*

> (3.11) People with depression in the United Kingdom are usually managed in primary care, and antidepressants are often the first line treatment. (BMJ-2)

The ideational discourse semantic resources identified in BMJ-1's Topic significance are also characteristic of the entire narrowed dataset. The stage is predominantly realised through present tense state figures, which reflects its static field perspective. Within the stage, thematic prominence is largely reserved for the entities referring to the object of study, which maintains the focus on the disorder under investigation (see (3.12)).

> (3.12) Body dysmorphic disorder (BDD) ['characteristic'] … BDD ['characteristic'] … Its prevalence ['measured dimension' of 'characteristic'] … It is common for those with BDD ['observed people' with 'characteristic'] … however, such interventions ['enacted activity' for managing 'characteristic'] … (BMJ-1)

To increase the amount of information within a single figure, RCT report writers frequently use nominalisations, which is in line with other SFL-based observations on scientific English (see, e.g., Halliday & Martin, 1993). These figures often include experiential metaphors (e.g., *deterioration of symptoms*) and/or reconstrued activity/characteristic entities (e.g., *behaviour/BDD*) linked in terms of causality. Given that the dataset focuses on the semiotic result *outcome* arising from a reconstrued characteristic *disorder* (i.e., *disorder outcomes*), it is unsurprising that external causality emerged as an important ideational resource, including:

- causal correlations/logical metaphors such as *be associated with*/*lead to*; and
- semiotic results such as *contributor*, *cause*, *burden*, *toll*, or *effect*.

In addition to condensing experiential content, nominalisation enables RCT report writers to evaluate the reconstrued entities and relations using a wider range of interpersonal resources. In fact, the APPRAISAL subsystems of ATTITUDE and GRADUATION have proven to be critical for ascertaining the importance of the object of a study (cf. Hood, 2010; Humphrey & Hao, 2013). To explore the interaction between ideational and interpersonal resources, it is now useful to retrieve the full text of the Topic significance stage in BMJ-1's research warrant (see Table 3.3).

Table 3.3: The complete Topic significance stage in the research warrant of BMJ-1 (coded for inscribed ATTITUDE).

Topic significance [[[[descriptive report]]]]	Text (BMJ-1)
Classification *definition (disorder)*	**Body dysmorphic disorder (BDD)** is a **psychiatric disorder** characterised by a pervasive preoccupation with perceived defects in physical appearance accompanied by avoidance and time-consuming **compulsive** **behaviours**, such as mirror gazing and excessive camouflaging to hide perceived defects.[1]
Description *effects* *prevalence* *treatments*	If left untreated, **this** is a chronic and unremitting **disorder** that is associated with **functional impairment** across multiple life domains, relatively high rates of psychiatric admissions to hospital, substance dependence, and suicidality.[2-4] Although the disorder is often underdetected and underdiagnosed within the mental health services,[5,6] epidemiological studies show that **it** is a common **mental health problem**, with a prevalence ranging from 0.7% to 2.2% in the general population.[7-10] It is common for those with body dysmorphic disorder to seek non-psychiatric care, such as dermatological treatment or plastic surgery, in an attempt to "fix" the perceived defects; however, such interventions rarely work and can lead to a **deterioration** of **symptoms**.[11,12] Evidence based treatments for body dysmorphic disorder include psychopharmacological treatment and cognitive behaviour therapy (CBT).[13-16]

As shown in Table 3.3, the characteristic entity *BDD* is targeted with multiple instances of inscribed attitude. Given the persuasive nature of research warrants, the very classification of *BDD* as *a psychiatric disorder,* which represents an axiologically-charged technicality (i.e., axi-tech), is used to initiate an attitudinal reading. In this situation, the use of the axi-tech *disorder* is agnate to using the semiotic entity *problem*, which inscribes '-valuation' of *BDD*. Similarly, BDD-related entities and occurrences are appraised to indicate '-capacity' of *those with BDD* ('observed people'). Specifically, the observational activity *behaviour* is described as *compulsive*, while the characteristic entity *impairment* and observational occurrence *deteriorate* are used to judge *functional capacity*.

To amplify the inscribed attitude and flag additional attitudinal reading, BMJ-1's writer makes use of a wide range of graduation resources. As indicated in (3.13), the qualities *chronic* and *unremitting* serve to upscale the '-valuation' of *BDD* in terms of 'extent: distribution: time':

(3.13) If left untreated, **this [BDD]** is a <u>chronic</u> and <u>unremitting</u> **disorder**…

Additionally, *BDD problem* is augmented in terms of 'extent: distribution: space' using the quality *common*, while the 'amount' of its *prevalence* is further gauged via an embedded clause (see (3.14)).

(3.14) **It [BDD]** is a <u>common</u> **mental health problem**, with a **prevalence** [[<u>ranging from 0.7% to 2.2% in the general population</u>]].

To continue saturating a negative prosody of *BDD*, graduation resources are also used to target the BDD-related entities (see (3.15)).

> (3.15) <u>time-consuming</u> **compulsive** **behaviours**… <u>excessive</u> **camouflaging**… **functional impairment** <u>across multiple</u> **life domains**, <u>relatively high rates</u> of **psychiatric admissions to hospital, substance dependence, and suicidality**

As marked in (3.15), the quality *time-consuming* broadens the 'extent: distribution: time' of *compulsive behaviours* ('-valuation'), while *excessive*, *multiple*, and *relatively high rates* amplify the 'amount' of BDD symptoms and potentially life-threatening outcomes. Lastly, the frequency adverbs *often/rarely* and the prefix *under-* are used to graduate 'modality' and 'occurrence', flagging '-valuation' of the enacted activity entities *the mental health services* and *non-psychiatric care* (see (3.16)).

> (3.16) the disorder is <u>**often**</u> <u>under</u>**detected** and <u>under</u>**diagnosed** within **the mental health services**… **such interventions [non-psychiatric care]** <u>**rarely**</u> work…

In conjunction with GRADUATION resources, BMJ-1's Topic significance suggests that causal relations play a significant role in extending an evaluative prosody. For example, the correlations *be characterised by* and *associated with* should position the reader to perceive *BDD* as <u>*extremely*</u> *harmful* to society due to its considerable negative symptoms/effects. Likewise, the logical metaphor *can lead to* is likely to transfer '-valuation' of *BDD symptoms* to the *non-psychiatric care* resulting in *symptom deterioration* (see (3.17)).

> (3.17) **Non-psychiatric care**… can lead to a **deterioration** of **symptoms.**

From an ENGAGEMENT point of view, BMJ-1's Topic significance shows a predominant use of reinforced monogloss, with a few instances of heteroglossia (see Table 3.3). In (3.18), for example, the trial-external publication entity *[1]* is introduced via footnote referencing to 'reinforce' BMJ-1's 'assertion' regarding diagnostic criteria.

> (3.18) Body dysmorphic disorder (BDD) is a psychiatric disorder characterised by… .[1]

By contrast, (3.19-20) show that the writer opts to employ 'contracting' heteroglossic features to negotiate *BDD prevalence* and the effectiveness of *non-psychiatric care*.

> (3.19) Although the disorder is often underdetected…, epidemiological studies show that **it** is a common **mental health problem**, with a prevalence…

> (3.20) It is common… to seek non-psychiatric care… in an attempt to "fix" the perceived defects; however, such interventions rarely work…

In (3.19), the realisation of an internal 'consequence: concession' (*although*) opens a dialogic space by acknowledging there may be doubt within the community regarding *BDD prevalence*. Nevertheless, such position is immediately 'countered' through an 'endorsement' of the enacted activity entity *epidemiological studies*. Likewise, the use of *however* in (3.20) aims to 'counter' any positive evaluation of *non-psychiatric* care as a commonly sought treatment.

In summary, the macroThematic Topic significance stages in the narrowed dataset were found to be construed by embedded descriptive reports on the object of study. In these reports, the writers describe the disorder under investigation with reference to its symptoms/effects, prevalence, and treatment. In BMJ-1 and LANCET-2, the Description stage is preceded by Classification defining the disorder. At the discourse semantic level, the object of study is built mainly though state figures, with entities targeted by a wide range of APPRAISAL resources. As illustrated through BMJ-1's stage realisation, evaluative language can be used to appraise different aspects of the disorder and disorder management. Therefore, a distinction can be made between the strategies that focus on different evaluative Targets. To establish topic significance, the in-depth analysis has shown that clinical psychology RCT report writers tend to combine the evaluative prosodies of:

- the disorder under investigation (including symptoms and effects);
- the affected population; and
- commonly sought treatments.

Due to the importance of these prosodies for writing an effective RCT report research warrant, the following sections further elaborate on the use of evaluation within the abovementioned lines of persuasion.[36]

3.2.1 Saturating a negative evaluative prosody of the disorder under investigation

The use of amplified evaluation targeting the characteristic entity *disorder* emerged as a complex persuasive strategy for establishing topic significance, involving multiple layers of evaluation (cf. *evaluative recoupling* in Szenes, 2017). Modelled upon the analysis of the narrowed dataset, Figures 3.3 and 3.4 illustrate the process of saturating the negative prosodic value of a disorder identified in this study.

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[36] The research presented in Sections 3.2.1-3.2.4 has been published as a research article in the *English for Specific Purposes* (*ESP*) journal (see Stosic, 2021).
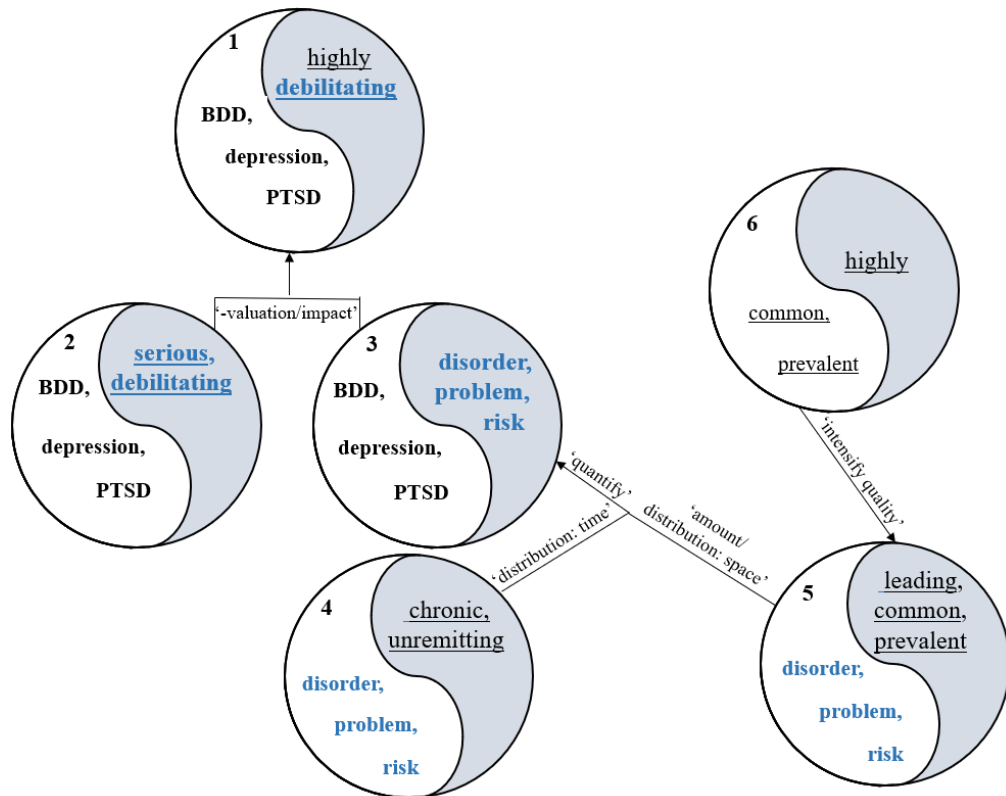
Figure 3.3: Saturating a negative evaluative prosody of a disorder via 'quantification' and 'intensification'.

As shown in Figure 3.3, the up-scaling of evaluation is achieved through either infused 'intensification: quality' or different means of 'quantification' resulting in a modified 'intensification' of the nominalised Targets (cf. "intensification" via "quantification" in Martin & White, 2005). For instance, the quality *debilitating* (= <u>*very*</u> *weakening*), amplifies an inscribed '-reaction: impact' of *BDD/depression/PTSD* through infused 'intensification' (Y2).[37] Alternatively, the tokens inscribing '-valuation/reaction: impact' of the psychological disorder (Y3) can be 'quantified'. More precisely, qualities such as *chronic* or *unremitting* can be used to 'intensify' the entities *disorder*, *problem*, or *risk* by augmenting their 'extent: distribution: time' (Y4). Moreover, qualities such as *common* or *prevalent* can be used to increase their 'amount/extent: distribution: space' (Y5). The latter qualities can be further pre-modified by another quality such as *highly* to raise 'intensification' (Y6).

A negative prosodic value of the disorder can also be advanced through causality, that is by using the negative effects of a disorder to saturate '-valuation/reaction: impact' (see Fig. 3.4).

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[37] Bracketed yin-yang symbol numbers (i.e., Y1,2, etc.) refer to the relevant part in Figures 3.3-4 (and Figure 3.5 in Section 3.2.2).
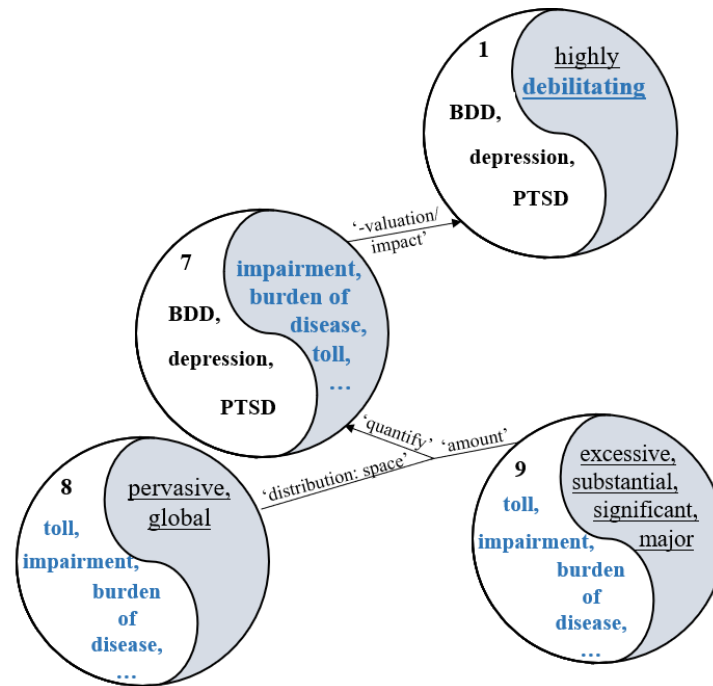
Figure 3.4: Saturating a negative evaluative prosody of a disorder via external causality.

As illustrated in Figure 3.4, these Appraising tokens include entities such as *impairment*, *burden of disease*, *toll*, *disability*, *suicidality* or *maternal mortality* (Y7). The focus on the more serious outcomes such as the possibility of permanent psychological/corporal damage or even death can be perceived as an infused 'intensification' of negative consequences. Simultaneously, the negative effects can be augmented through pre-modifiers such as *global or substantial*, which graduate 'extent: distribution: space' (Y8) and 'amount' (Y9), respectively.

Ultimately, the resulting evaluation of the *disorder* as *highly debilitating and prevalent* (Y1) undoubtedly translates into a compelling justification for an RCT testing the effectiveness of potential treatments. An illustrative example of the overall strategy can be found in the opening sentence of LANCET-1 (see (3.21)).

> (3.21) **Clinical depression** is a <u>common</u> and **debilitating** mental health **disorder**, being <u>the second largest</u> **cause** of <u>global</u> **disability**.[1] (LANCET-1)

According to (3.21), not only does *clinical depression* considerably weaken (i.e., *debilitate*) mental functioning of many people, but many people around the world become *disabled* because they are *clinically depressed*. Thus, the reader is invited to conclude that testing potential treatments for clinical depression is extremely important and can have a significant impact on a *global* level.

Saturating a negative prosodic value of the disorder under investigation can be perceived as a predominantly implicit persuasion strategy. Save for a few instances of inscribed '-valuation/reaction: impact' (e.g., *debilitating*, *problem*, or *risk*), the experiential content consists of graduated medical axi-tech potentially invoking negative attitude. In other words, it is reasonable to expect that the medical community observes the terms such as *depression*,

disorder, or *impairment* as technicality rather than expressions of attitude (cf. legal axi-tech in Martin & Zappavigna, 2016). However, this thesis argues that RCT report authors can use graduation resources to flag and reclaim attitude from medical axi-tech with a view to persuading the readership of the importance of their medical research. For instance, tackling a health issue in an RCT is likely to be a requirement rather than a valid reason for publication – a "high impact" paper should address a "high impact" disorder. Similarly, there is a need to convince the policymakers such as the UK National Institute for Health and Care Excellence (https://www.nice.org.uk/) or the US Food and Drug Administration (https://www.fda.gov/) to re-examine current treatments. Therefore, the use of graduation in the Topic significance stage can be interpreted as necessary due to the persuasive nature of trial justification.

3.2.2 Graduating the affected population

In addition to invoking '-capacity' of those suffering from a disorder through '-valuation' of symptoms/effects (e.g., *impairment*, *disability*), the Topic significance stage targets the observed people entities with different means of GRADUATION (see Fig. 3.5).
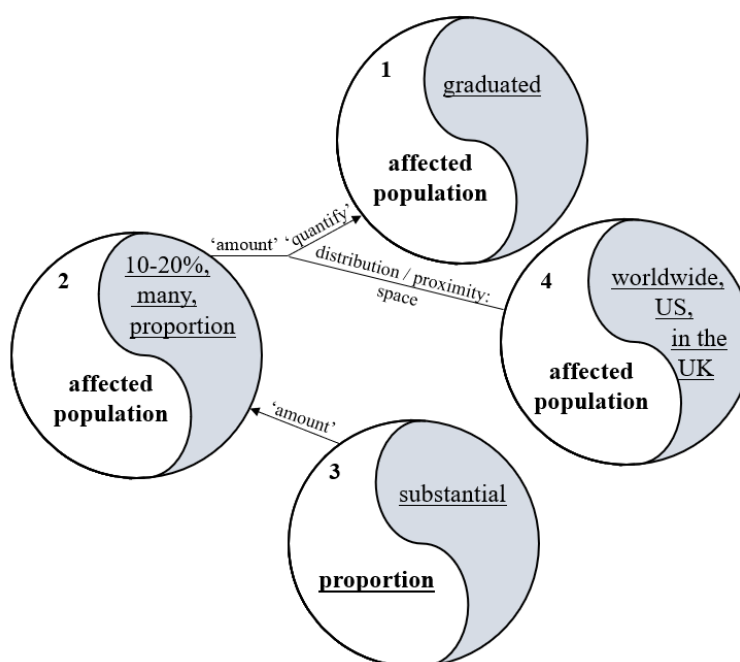
Figure 3.5: Graduating the affected population.

To graduate the 'amount' of the *affected population*, writers can use numerals (e.g., *10-20%*), quantifiers (e.g., *many*), or measured entity dimensions (e.g., *proportion*) to indicate precise or imprecise 'quantification' (Y2). Furthermore, topic significance can be amplified by up-scaling 'amount' (Y2-3) as well as 'extent: distribution/proximity: space' (Y4) of those affected by a disorder. For instance, LANCET-2 and JAMA-1 graduate the affected population in the following manner:

(3.22) (post-partum depression): <u>10-20%</u> of <u>all</u> **mothers** who give birth <u>in high-income and low-income countries worldwide</u>. (LANCET-2)

(3.23) (depression): <u>10.8 million</u> <u>US</u> **residents** (JAMA-1)

In both cases, the 'amount' of the evaluative Targets – *mothers* and *residents* – is graduated using numerals and/or quantifiers – *10-20%/all* and *10.8 million*. Simultaneously, the Graduating tokens *high-income and low-income countries worldwide* and *US* are employed to specify the 'extent: distribution: space' of the affected population. The meaning of *worldwide* in (3.22) is comparable to that of the characteristic *global* augmenting the effects of a disorder. However, the use of *US*, which characterises *residents* in (3.23), appears to increase the relevance of current research by focusing on the precise location of its target readership. In other words, the place *US* can also be interpreted as heightened 'extent: proximity: space' for two reasons:

- JAMA-1 reports on an RCT involving US residents; and
- JAMA-1 was written with the aim of being published in the *Journal of the American Medical Association (JAMA)*.

Similar strategies can be observed in (3.24-35):

(3.24) (depression): **people with depression** <u>in the United Kingdom</u>; (BMJ-2)

(3.25) (PTSD): <u>10% to 20%</u> of **military personnel** returning from **deployments** <u>to Iraq and Afghanistan</u>. (JAMA-2)

The use of *the United Kingdom* in (3.24) reflects the fact that BMJ-2, which has been published in the *British Medical Journal (BMJ)*, reports on an RCT involving patients in the UK. Likewise, since the war operations in *Iraq* and *Afghanistan* represent prominent US military engagements, 'quantification' of *deployments* with reference to these locations in (3.25) is likely to raise the interest of the *JAMA* readership.

As illustrated in (3.22-25), graduating the affected population consists of previously published statistics, which makes this practice a highly implicit and nuanced persuasion strategy. To raise the significance of their research topic, RCT report authors tend to select the information that emphasises the disorder's: (a) global impact; or (b) impact on the journal's place of publication and/or RCT participants' location.

3.2.3 The "slingshot" strategy

In the dataset, the enacted activity entity *intervention* is also used as an evaluative Target to indicate the significance of an RCT for the scientific community. In some cases, this is achieved through instances of inscribed positive assessment targeted at the intervention type under investigation (see (3.26-27)).

(3.26) There is **interest** ['+valuation'] in **the effectiveness and safety of new and nonpharmacologic treatments for depression**. (NEJM-1)

(3.27) An estimated <u>10.8 million US</u> ['amount + extent: proximity: space'] **residents** may **benefit** ['+valuation'] from **an alternative treatment** each year. (JAMA-1)

Alternatively, the importance of further research can be raised by flagging '-valuation' of a commonly sought intervention. This thesis refers to such persuasive manoeuvre as the **"slingshot" strategy** (see Fig. 3.6).
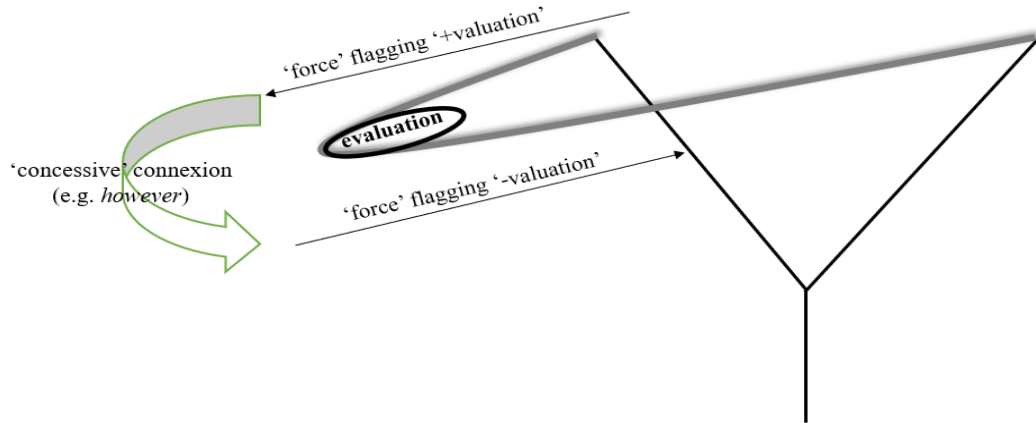
Figure 3.6: The "slingshot" strategy.

The "slingshot" metaphor has been chosen to illustrate a rhetorical move in which a prosodic value of an intervention is pulled into a positive direction by amplifying 'force' only to be released by a 'concessive' connexion (e.g., *however*) and used for up-scaling '-valuation' flagged by another Graduating token. In other words, the "slingshot" strategy uses 'intensification' and 'quantification' to heighten the expectations about the effectiveness of a treatment and then contrast these expectations with how ineffective the treatment is.

In BMJ-1's Topic significance, for example, the fact that *it is <u>common</u>* to undergo *dermatological treatments* or *plastic surgery* flags '+valuation' of these interventions. Nevertheless, the subsequent use of the 'concessive' *however* and a down-scaled 'modality' in <u>*rarely*</u> *works* transforms this information into a means for 'intensifying' how detrimental these non-psychiatric treatments can be (see (3.28)).

(3.28) frequent (common) non-psychiatric care + rare success/deterioration of symptoms = highly frequent problems associated with non-psychiatric care

Consequently, the fact that there are highly frequent problems associated with *non-psychiatric care* implies an increased importance of testing a psychiatric intervention in treating body dysmorphic disorder, which is the object of the BMJ-1 trial.

In the "slingshot" strategy, typical Graduating tokens express 'intensified modality' (e.g., *often*, *rarely*, and *usually*), which is then combined with 'intensified' expressions of 'quantification'. Arguably, the most representative example of this strategy can be found in BMJ-2, which investigates resistant depression (see (3.29)).

(3.29) **People with depression** <u>in the United Kingdom</u> are **<u>usually</u>** managed in primary care, and **antidepressants** are **<u>often</u>** <u>the first line</u> **treatment**. <u>The number of **prescriptions for antidepressants** has risen dramatically</u> in <u>recent</u> **years** <u>in the National Health Service [NHS], increasing by 6.8% (3.9 million items) during 2014-15 (total 61 million items).</u>[2] <u>Many</u> **patients**, however, do not respond to **treatment**. (BMJ-2)

In the first two sentences of (3.29), numerous graduation resources are used to build a picture of *antidepressants* as a highly effective treatment. If (a) antidepressants are *usually/often the first* choice for treating depression ('intensified modality') and (b) *the number of prescriptions has risen dramatically* ('quantified amount' + 'intensified occurrence'), it is reasonable to assume that the medical community has invested a significant amount of trust in the effectiveness of this treatment. Furthermore, the relevance of the invoked '+valuation' for the BMJ readership is raised by indicating the spatio-temporal 'proximity' of the data – *the United Kingdom /National Health Service* ('extent: proximity: space') and *recent years/during 2014-15* ('extent: proximity: time'). However, an alternate purpose of this evaluative work is revealed in the final sentence. Here, the use of a 'concessive' (*however)* connexion indicates a shift in the prosodic value of the treatment (positive → negative), with the evaluative 'force' that was applied to invoke '+valuation' now employed to amplify '-valuation'. Moreover, the up-scaled 'amount' in *patients* introduces the last piece of 'intensification' (see (3.30)).

(3.30) many UK patients resistant to antidepressant treatment + the number of NHS antidepressant prescriptions has risen dramatically in recent years = the number of UK patients resistant to antidepressant treatment has risen dramatically in recent years

As summarised in (3.30), it is the joint 'force' of these opposing directions of evaluation that creates the image of a tremendous significance of the object of the study – testing the effectiveness of treatments for resistant depression. As such, this persuasion strategy seems to be as implicit as that of graduating the affected population described in the previous section.

3.2.4 Engaging with the medical discourse community – asserting the facts

As demonstrated in [Sections 3.2.1 – 3.2.3](.), RCT report authors tend to use evaluative couplings to highlight the significance of their study for the medical discourse community. Namely, the ATTITUDE and GRADUATION subsystems are used to evaluate the experiential content – disorders and their symptoms/effects, affected population, and treatments. As far as the ENGAGEMENT subsystem is concerned, the narrowed dataset of Topic significance stages predominately uses monoglossic propositions (72%) to communicate topic significance.

A high percentage of monogloss implies that the author wishes to assert the facts and generally does not anticipate disagreement on the reader's behalf. However, the citations of trial-external publication entities (e.g., [1,2] in (3.31)) indicate that these assertions need to be reinforced by existing research.

> (3.31) Major depressive disorder (MDD) is a chronic, debilitating disorder[1] that affected an estimated 16.1 million adults in the United States in 2015.[2] (JAMA-1)

The use of 'reinforced assertions' is an essential part of all three strategies identified in this study because it allows the author to move from individual subjectivity to communal objectivity.

As shown in the "slingshot" strategy analysis, 'contracting' heteroglossic options are sometimes used to shift a prosodic value of common treatments from positive to negative. As highlighted in (3.32), a writer can open and 'contract' a dialogic space by acknowledging a proposition that there is an adequate treatment only to 'counter' it via a 'consequence: concession' connexion (e.g., *however*), followed by a proposition that 'denies' its validity.

> (3.32): People with depression in the United Kingdom are usually managed in primary care, and antidepressants are often the first line treatment… Many patients, however, do not respond to treatment. (BMJ-2)

As an alternative, the room for dialogue within the scientific community is occasionally opened and 'expanded' when proposing a solution. For example, (3.33) 'entertains' *the benefit of alternative treatments* by using modality.

> (3.33) An estimated 10.8 million US residents may benefit from an alternative treatment each year. (JAMA-1)

In either case, an acknowledgement of an opposing view on treating a disorder is likely to position the reader to perceive the RCT report as more objective. In addition, all identified heteroglossic features – 'countering', 'denying', and 'entertaining' – indicate that an RCT needs to be conducted before the effectiveness of an intervention can be asserted as undisputed, thus warranting further research.

3.3 The Evidence stage

According to the preliminary analysis of research warrants, Topic significance is followed by one or two Evidence stages construed by reflective (topic & study) components (see Section 3.1). Like Topic significance, however, the in-depth generic analysis of the narrowed dataset revealed that Evidence stages tend to be construed by embedded genres supplanting the reflective components (cf. Hood, 2010; Humphrey & Hao, 2013). Across the dataset, all Evidence stages were found to be realised by either argumentative genres, descriptive reports, or factorial explanations. Through these genres, RCT report writers aim to create an important research gap by assessing: (a) *depression and anxiety outcomes* (i.e., the object of study); and (b) *medical outcome research* (i.e., the general field of study). Thus, the following subsections explore how generic structuring and discourse semantic features facilitate and add depth to trial justification.

3.3.1 Using evidence to argue a position

In the narrowed dataset, six out of eight research warrants (BMJ-1/2, JAMA-1/2, LANCET-1, and NEJM-1) contain Evidence stages that are construed by an embedded argumentative genre – exposition, discussion, or challenge (cf. *argumentative genres* in Martin & Rose, 2008). These genres are aimed at using the existing evidence to promote or oppose treatment guidelines.

Invariably, argumentative genres start with a Position stage that identifies the preferred medical practice and establishes a dominating positive prosody of an intervention. Thus, at the discourse semantic level, Position functions as a textual macroTheme of the embedded genre. Ideationally, thematic prominence in a Position is given to either institutions (e.g., *the NICE* in (3.34)) or enacted activity entities (e.g., *a shorter course of exposure therapy* in (3.35)).

> (3.34) The National Institute for Health and Care Excellence (NICE) advises… (BMJ-2)

> (3.35) A shorter course of exposure therapy could… (JAMA-2)

Interpersonally, these entities represent key resources for configuring a line of argumentation. Specifically, it was revealed that a Position can ascertain '+valuation' of the enacted activity *intervention* by:

1. outsourcing the appraisal to an authoritative institution through

   a. figure positions that 'attribute' positive assessment to an institution as the position source entity (e.g., *NICE recommends* in (3.36));

   > (3.36) Guidance from the National Institute for Health and Clinical Excellence (NICE) **recommends** that adults should be offered the choice of either **a course of a selective serotonin response inhibitor** or **specialised CBT that deals with the key features of the disorder**.[17] (BMJ-1)

   b. or enacted occurrence figures whose occurrence entails positive assessment on behalf of the perpetrator institution entity (e.g., *FDA approved* in (3.37));

   > (3.37): In 2009, **transcranial magnetic stimulation** was *approved* by the Food and Drug Administration [FDA] for the treatment of major depressive disorder.[2] (NEJM-1)

2. 'entertaining' positive assessment through a modalised occurrence figure that flags '+valuation' to the perpetrator enacted activity entity (*a shorter course of exposure therapy could hasten* in (3.38)));

   > (3.38) **A shorter course of exposure therapy** could hasten **amelioration** of **PTSD**. (JAMA-2)

3. flagging positive assessment through a co-elaboration between the enacted activity entities and an up-scaled 'amount' of the semiotic proof entity *evidence* (e.g., *antidepressant medication and CBT* in (3.39)).

   > (3.39) **Antidepressant medication** and **cognitive behavioural therapy (CBT)** have the most **clinical evidence.** (LANCET-1)

Having set the dominating positive evaluative prosody of a treatment in the opening stage, the writers can use evidence to:

- argue for the position one-sidedly via an embedded exposition genre;
- discuss the position from different perspectives via an embedded discussion genre; or
- challenge the position via an embedded challenge genre.

In this study, embedded expositions and discussions were found to be resources for promoting a position, whereas embedded challenges were identified as a means for opposing it.

3.3.1.1 Warranting new research through exposition

To illustrate the interaction of language resources in a one-sided promotion, this section explores the embedded exposition functioning as Evidence in JAMA-1's research warrant, which is concerned with resistant depression treatments (see Table 3.4).

Table 3.4: The embedded exposition functioning as the Evidence stage in JAMA-1's research warrant.

Evidence *[[[[exposition]]]]*	Text (JAMA-1)
Position *view*	For these patients [with resistant depression], most treatment guidelines recommend either switching to another antidepressant or adjunctive use of another antidepressant or nonantidepressant agent.[5-7] Among the most commonly used of these treatment strategies are switching to bupropion, a norepinephrine-dopamine reuptake inhibitor, and adjunctive use of either bupropion or aripiprazole, a second-generation antipsychotic that is a partial dopamine agonist.[8]

Argument 1
  burnishing
  tarnishing
	The STAR*D trial showed that bupropion was at least as effective as other switching[9] and augmenting agents.[10] However, STAR*D was not powered to compare bupropion switching and augmentation strategies,[11] and atypical antipsychotics, frequently used as adjunctive agents for treatment-resistant MDD even prior to US Food and Drug Administration approval,[12] were not included.

Argument 2
  burnishing
 	
  tarnishing
	Several studies have shown aripiprazole is efficacious as an antidepressant augmentation strategy[13] and a recent study suggested aripiprazole augmentation is more beneficial than antidepressant switching and is comparatively tolerable.[14] However, adequately powered and well-controlled clinical trials have yet to compare the effectiveness of these 2 treatments or compare them with augmentation with a second antidepressant.

As shown in Table 3.4, JAMA-1's exposition comprises three stages: Position, Argument 1, and Argument 2. To a large extent, it gives thematic prominence to the field of study, which is construed by semiotic locutions (e.g., *guidelines*) and those enacted activity entities (e.g., *trial*) that are involved in the knowledge building process (see (3.40)).

(3.40) For these patients, most treatment guidelines… The Sequenced Treatment Alternatives to Relieve Depression (STAR*D) trial… However, STAR*D… Several studies… and a recent study… However, adequately powered and well-controlled clinical trials…

The Position stage begins with the figure position *recommend*, which inscribes '+valuation' of the enacted activity entity (i.e., *strategy*) that involves one of the two instrumental things: *another antidepressant* or *nonantidepressant agent* (see (3.41)).

(3.41) most **treatment guidelines recommend** either **switching to another antidepressant** or **adjunctive use of another antidepressant or nonantidepressant agent**.[5-7]

Through the semiotic locution *treatment guidelines*, (3.41) expresses a positive *view* on the object of study, 'attributing' it implicitly to the cited publications ([5-7]). Concurrently, the 'intensified amount' (*most*) of the *guidelines* strengthens the reliability of such evaluation, which suggests the writer's strong alignment with the propositional value (cf. Hood & Martin, 2005; Humphrey & Hao, 2013). To transfer the evaluative prosody to the more specific objects of study, the following co-elaborated state figure establishes a classification taxonomy between *these strategies* ('valeur: specificity') and those that use the instrumental things *bupropion* and *aripiprazole* (see (3.42)).

(3.42) the most **commonly** used of these (**recommended**) **treatment strategies are bupropion and aripiprazole strategies**

Put simply, *bupropion and aripiprazole strategies* are inscribed '+valuation' as co-class members of *these* (*recommended*) *strategies*, which is further amplified by the 'intensified modality' of their use (*the most* common).

In JAMA-1, the Position stage of the embedded exposition is followed by two Argument stages, which introduce supporting evidence (see Table 3.4). In the argumentative stages, a distinction can be made between the two types of evaluative couplings with reference to their Targets – the object and the field of study (cf. Hood, 2010).

Ideationally, both argumentative stages start with positioned extended state figures, which contain attitudinal qualities (*effective bupropion* in (3.43)); *efficacious, beneficial, tolerable aripiprazole augmentation* in (3.44)).

(3.43) Argument 1: STAR*D trial showed that **bupropion** was at least as **effective** as other switching[9] and augmenting agents.

(3.44) Argument 2: Several studies have shown **aripiprazole** is **efficacious** as an antidepressant augmentation strategy[13] and a recent study suggested **aripiprazole augmentation** is more **beneficial** than antidepressant switching and is comparatively **tolerable**.

From an interpersonal perspective, (3.43-44) 'endorse' the findings of the *STAR*D trial* and *several studies*, which inscribe '+valuation' of *bupropion* and *aripiprazole strategies*. Likewise, a description of *aripiprazole augmentation* as *beneficial* and *tolerable* in (3.44) is 'attributed' to *a recent study*. Among these instances of inscribed '+valuation', three attitudes are further

'intensified' through comparison: *at least as*, *more than*, and *comparatively*. Finally, it should be highlighted that JAMA-1's Evidence contains no instances of negative evaluation targeted at either medication (i.e., the object of study).

To evaluate the field of study and create a research gap, both argumentative stages utilise *burnishing* and *tarnishing* phases (cf. *burnishing* and *tarnishing* in Humphrey & Hao, 2013). In other words, heteroglossic features and Graduating tokens are employed to switch between positive and negative assessments of the existing research.

Each Argument stage begins with a *burnishing* phase, as indicated in (3.45-46).

(3.45) Argument 1: **STAR*D trial <u>showed</u>**…

(3.46) Argument 2: <u>Several</u> **studies <u>have shown</u>**… a <u>recent</u> **study <u>suggested</u>**…

In addition to signalling 'endorsement', the figure position *show* signals a higher degree of knowledge 'fulfilment: actualisation' (Hood & Martin, 2005). This in turn flags '+valuation' of the field of study (*STAR*D trial* in (3.45); *studies* in (3.46)). In the Argument 2 stage, research reliability is further amplified by using the quantifier *several* to up-scale the 'amount' of *studies*. Similarly, although the position *suggest* in (3.46) indicates a lower degree of knowledge 'fulfilment: actualisation', the writer flags '+valuation' of the *study* by highlighting its 'extent: proximity: time' (*recent*).

To justify JAMA-1's trial, however, the *burnishing* phases are succeeded by those that *tarnish* the field of study. In both stages, an internal 'consequence: concession' (*however*) is used to indicate a shift from a positive to negative assessment of existing research (see Fig. 3.7).
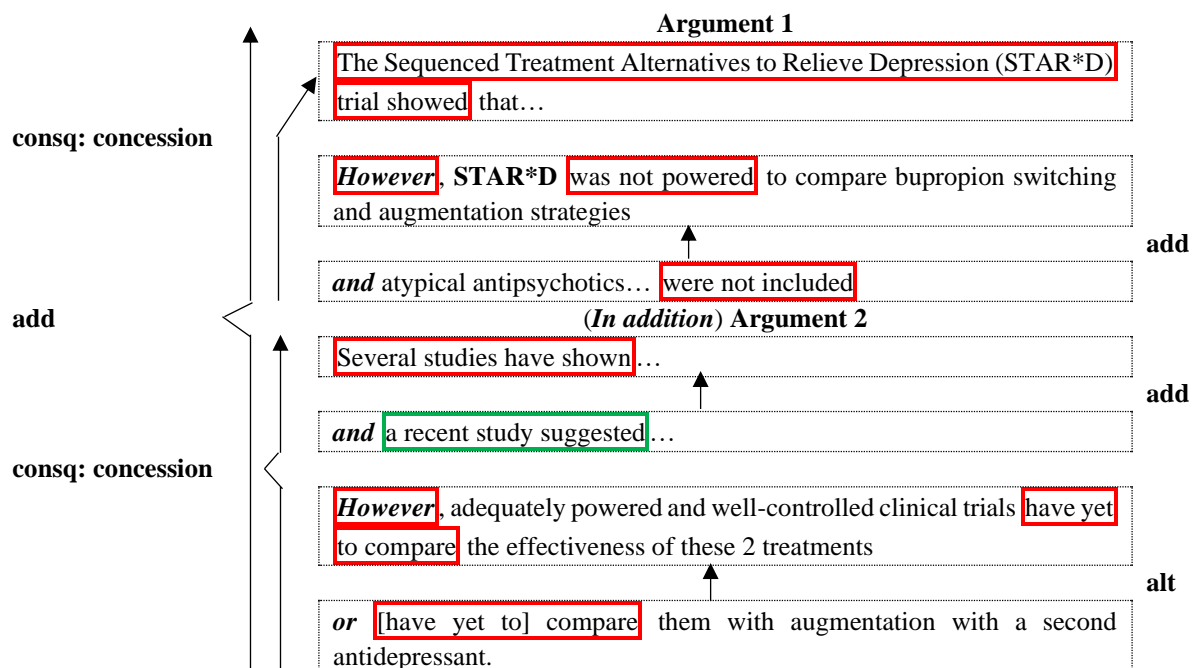
Figure 3.7: CONNEXION *and* ENGAGEMENT *analyses of the Argument stages in the exposition functioning as Evidence in JAMA-1's research warrant.*

As illustrated in Figure 3.7, the concessive *however* 'counters' the initial propositions that highlight 'fulfilment: actualisation' of knowledge. To further flag '-valuation' (i.e., limitations) of *STAR*D trial* and *studies*, negation is used to 'deny' certain knowledge – <u>*not* powered</u>, <u>*not* included</u>, and <u>*yet* to compare</u>. As a result, the writer manages to simultaneously *tarnish* the general field of study and promote JAMA-1's trial as the specific field of study that addresses the identified research gap (see (3.47)).

> (3.47) (foreshadowing the JAMA-1 trial) an **adequately** ['+valuation] **powered** and **well-controlled** ['+composition: balance'] **trial** that compares bupropion switching and augmentation strategies and includes an atypical antipsychotic (aripiprazole)

Importantly, neither 'countering' nor 'denial' are aimed at questioning the findings that inscribe '+valuation' of the *recommended treatment strategies* (i.e., what has been shown/suggested). Instead, the purpose of *tarnishing* is to maintain the positive prosody of the object of study while opening a research space for the reported trial. In addition to using 'countering/denial', the general field of study can be *tarnished* by down-scaling its quantity. For instance, (3.48) uses the characteristic *pilot* to indicate a small study with promising preliminary findings.

> (3.48) In a <u>pilot</u> **study**, **this [BDD-NET]** was found to be **safe** [+valuation], <u>highly</u> **acceptable** ['intensified +valuation'] to patients, and potentially **efficacious** ['+valuation']. (BMJ-1)

The generic and discourse semantic features of the embedded exposition serving as JAMA-1's Evidence stage are characteristic of other expositions identified in the narrowed dataset (i.e., Evidence B stages in BMJ-1, JAMA-2, and NEJM-1). In each case, the Position stage is followed by Argument stages linked via internal 'addition' (*in addition*) connexion. By embedding expositions, RCT report writers aim to create a research gap by:

- positively evaluating the object of study through (mainly) graduated inscribed ATTITUDE; and

- burnishing and tarnishing the field of study through ATTITUDE that is (mainly) flagged using ENGAGEMENT and GRADUATION.

In addition to the obligatory Position and Argument stages, the in-depth genre analysis has revealed two optional exposition stages: Restatement of position and Background information.

> Restatement of position was found to be the final stage of JAMA-2's exposition, linked to the previous stages via an internal 'consequence: conclude' (*thus*) connexion (see (3.49)).

> (3.49) *Thus*, **massed therapy** was expected to be **noninferior** to typical spaced prolonged exposure therapy (spaced therapy).

As shown in (3.49), Reinstatement of position represents macroNew of the embedded exposition, offering a heteroglossic 'justification' for inscribing '+valuation' of the treatment being promoted. In (3.49), the assessment itself is construed through an extended state figure

that relates the quality *noninferior* to the enacted activity entity *massed therapy*. This is accompanied by the figure position *was expected*, which merely 'entertains' the evaluative proposition, reiterating the need for further research.

When it comes to the Background information stage, there was one instance identified between the Position and Argument stages of NEJM-1's exposition (see (3.50)).

> (3.50) In this procedure [transcranial direct-current stimulation - tDCS], weak, direct current is applied through electrodes that are placed on the scalp to induce alterations in cortical activity and excitability. In patients with major depressive disorder [MDD], tDCS-induced currents are applied to the dorsolateral prefrontal cortex, which is considered to be a target for mood regulation.

The above extract consists of two present tense enacted occurrence (*apply*) figures that elaborate on the enacted activity entity *tDCS*, which is the object of promotion. Within the figure configurations, the writer discloses the instrumental things (*direct current/electrodes*) as well as the observed people (*patients with MDD* and their *scalp/dorsolateral prefrontal cortex*). Although the primary focus of this stage is on introducing more specific experiential content, the qualification of these entities is likely to flag '+valuation' of *tDCS*. Specifically, the quality *weak* down-scales the 'amount' of *direct current*, suggesting *tDCS* safety. Similarly, *the dorsolateral prefrontal cortex* is correlated with the observational activity entity *mood regulation*, indicating a highly targeted treatment for *MDD patients*.

While the aim of Restatement of position appears to be further saturation of a positive evaluative prosody of the object of study, it is much harder to determine the reasons behind incorporating Background information due to the small size of the dataset. One possible reason might be the fact that *tDCS* intervention is not as established as those that are either pharmacological or psychological in nature.

3.3.1.2 Warranting new research through discussion

Arguably, a decision to construe an Evidence stage by a discussion genre instead of an exposition indicates a more balanced approach to promoting a treatment strategy. As a representative example, this section showcases the analysis of the embedded discussion functioning as the Evidence stage in BMJ-2's research warrant (see Table 3.5). Fortuitously, BMJ-2's Evidence focuses on the same object of study (*resistant depression outcomes*) as JAMA-1's Evidence, which was discussed in the previous section. This should facilitate a comparison between one-sided and multi-sided promotion tactics for creating a research gap.

Table 3.5: The embedded discussion functioning as the Evidence stage in BMJ-2's research warrant.

Evidence *[[[[discussion]]]]*	Text (BMJ-2)
Position *view*	The National Institute for Health and Care Excellence (NICE) advises general practitioners to reconsider treatment if patients show no response after 4-6 weeks of antidepressant use.[4]
Perspective 1 *tarnishing* *disputing*	Limited evidence is currently available to guide doctors in the management of patients who meet the ICD-10 (international classification of diseases, 10th revision) criteria for depression after taking a serotonin-noradrenaline reuptake inhibitor (SNRI) or selective serotonin reuptake inhibitor (SSRI) at an adequate dose for a minimum of six weeks.[5] Several drug strategies have been proposed, including increasing the dose, switching antidepressants, combining two antidepressants, and augmenting the antidepressant with another psychotropic drug, such as lithium or an antipsychotic.[6] A systematic review of antidepressant combinations for those who did not respond to monotherapy found that the small number of trials and methodological drawbacks of those trials precluded definitive conclusions about effectiveness, and some of the combinations carry a substantial risk of adverse effects and are not considered appropriate for initiation in primary care.[7]
Perspective 2 *conceding* *tarnishing*	There is a pharmacological rationale for adding a second antidepressant with a different and complementary mode of action to SSRIs or SNRIs. Mirtazapine, a noradrenaline (α2 adrenoreceptor) and serotonin (5 hydroxtryptamine receptors 2 and 3) antagonist, has the potential for an additive and perhaps synergistic action with SSRIs and SNRIs and could enhance clinical response compared with monotherapy with SSRIs or SNRIs. Four trials have been carried out of this combination against SSRI and SNRI monotherapy in participants who are treatment resistant and in those without treatment failure, with mixed results.[8-11]

As shown in Table 3.5, BMJ-2's discussion consists of three stages: Position, Perspective 1, and Perspective 2. Like JAMA-1, BMJ-2's stage predominantly gives thematic prominence to the entities belonging to field of study. These entities include institutions (*NICE*), semiotic proof (*evidence*), and those enacted activities that are involved in the knowledge building process (*systematic review, trial*). As indicated in (3.51), the Position stage in BMJ-2's discussion also utilises a figure position (*advises*) that inscribes '+valuation' of an enacted activity (*strategy*) that requires *general practitioners to reconsider antidepressant treatment* for *patients with resistant depression*.

> (3.51) The <u>National</u> **Institute** <u>for Health and Care Excellence</u> (NICE) **advises** general practitioners **to reconsider treatment if patients show no response after 4-6 weeks of antidepressant use**.

In (3.51), a positive *view* on the object of study is 'attributed' to the institution *NICE*. To demonstrate validity of such assessment, *the Institute*'s competent authority ('+capacity') is flagged through its 'extent: distribution: space' (*National*) and 'valeur: specificity' (*Health and Care Excellence*).

Unlike the previously analysed exposition, however, BMJ-2's Position is succeeded by two Perspective stages, which discuss the initial *view* by using both opposing and supporting evidence. To link the subsequent stages/phases and direct evaluative prosodies, the writer relies heavily on implicitly realised internal CONNEXION (see Figs. 3.8 and 3.9).

Position:

The National Institute for Health and Care Excellence (NICE) advises…

consq: concession

(*however*)

Perspective 1:

Limited evidence is currently available…

simil: rework

(*i.e.*) Several drug strategies have been proposed…[6]

consq: concession

(*however*) A systematic review of antidepressant combinations for those who did not respond to monotherapy found that…
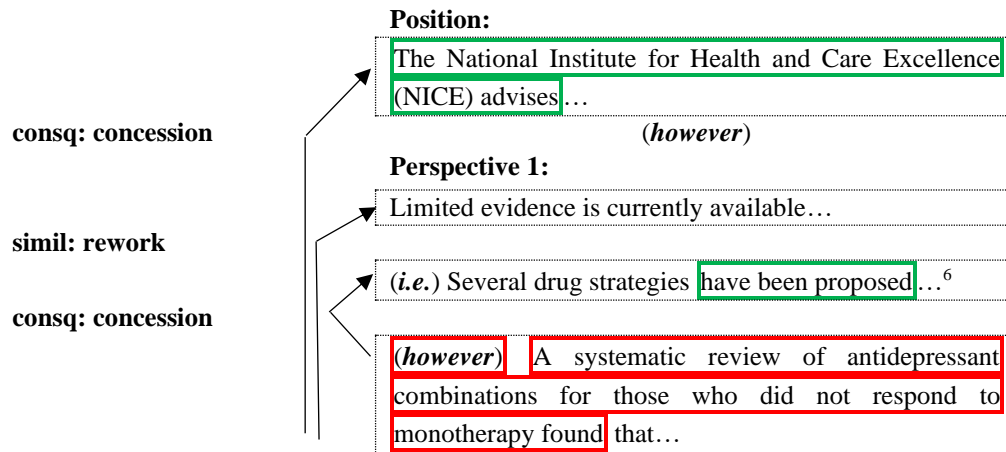
Figure 3.8: CONNEXION and ENGAGEMENT analyses of the discussion functioning as Evidence in BMJ-2's research warrant (Part 1).

As illustrated in Figure 3.8, there is an implicit 'consequence: concession' (*however*) connexion linking Position and Perspective 1, which signals a shift from the positive to the negative prosodic value. Put simply, Perspective 1 is aimed at reviewing the existing evidence that questions the *advice* given by the *NICE*. In the opening extended state figure, the 'amount' of *available evidence* is down-scaled through quality *limited*, which inscribes '-valuation' of the field of study and implies an obstacle in implementing the *advice* (see (3.52)).

(3.52) **Limited** evidence is currently **available** to guide doctors…

To further *tarnish* the *evidence* and criticise the *advice*, BMJ-2's writer then introduces two figures via an implicit 'similarity: rework' (*i.e.*) connexion (see Fig. 3.8). Initially, '+valuation' of *several drug strategies* is inscribed using the position *have been proposed*, 'attributing' appraisal to the implicitly realised enacted activity *research* (i.e., publication [6]). As marked in (3.53), a classificatory co-elaboration (*including*) is used to transfer '+valuation' of the *proposed strategies* to a set of the occurrences that subsume the enacted activities under investigation: *drug switching* and *drug augmentation*.

(3.53) **proposed** drug strategies = **increasing the dose, switching antidepressants, combining two antidepressants, and augmenting the antidepressant with another psychotropic drug, such as lithium or an antipsychotic**

However, the positive assessments of both *research* and *drug strategies* are immediately 'countered' using a 'consequence: concession' (*however*) connexion and a positioned state figure that 'endorses' the findings of a *systematic review* (see Fig. 3.8). As indicated in (3.54), these findings 'deny' the 'fulfilment: actualisation' of knowledge using an enhanced state

(*preclude*) figure, which correlates a down-scaled 'amount' of *trials* (*small number*) and '-valuation' of *methodology* (*drawbacks*) with a negative assessment of *conclusions* (*not definitive*).

> (3.54) <u>the small number</u> of **trials** and **methodological drawbacks** of those **trials** <u>precluded</u> **definitive conclusions about effectiveness**

Similarly, treatment effectiveness is *disputed* by correlating *some of the drug combinations* to an 'intensified amount' (*substantial*) of *risk* and *adverse effects* (see (3.55)). [38]

> (3.55) <u>some</u> of **the combinations** carry a <u>substantial</u> **risk** of **adverse effects** and are **not appropriate** for initiation in primary care

As labelled in (3.55), the inscribed '-valuation' of the object of study is further saturated through a 'denial' of its *appropriateness in primary care*. Nevertheless, it should be noted that the 'amount' (*some*) of negatively evaluated *combinations* is not maximised. That is, it is implied that there are <u>*some drug combinations*</u> that could be positively evaluated. Ultimately, this is what enables BMJ-2's writer to move on to Perspective 2 through an implicit 'difference: retraction' (*on the other hand*) connexion (see Fig. 3.9).
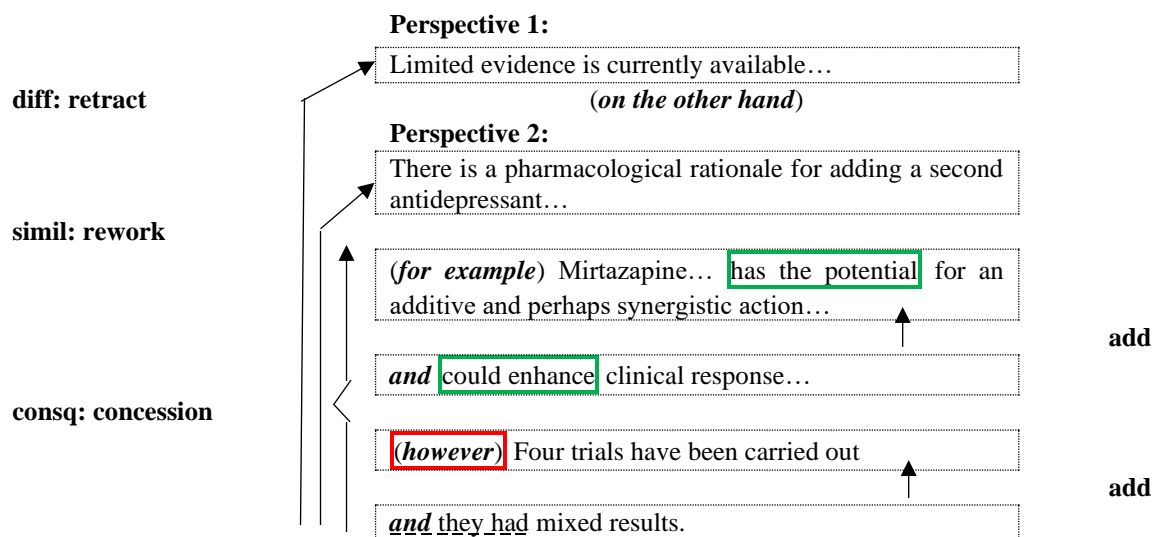
Figure 3.9: CONNEXION and ENGAGEMENT analyses of the discussion functioning as Evidence in BMJ-2's research warrant (Part 2) (with marked <u>unpacked grammatical metaphors</u>).

While Perspective 1 starts with concession to stop a positive evaluative prosody established in the Position stage, a retracting connexion allows Perspective 2 to resume it. *Conceding* that *the NICE advice* has some merit, the writer employs the semiotic proof entity *pharmacological rationale* as justification, which flags a '+valuation' of *a strategy* that would involve *adding a second antidepressant*. To offset the previously inscribed '-valuation' of *some strategies*, the 'valeur: specificity' of the instrumental thing *antidepressant* is sharpened (see (3.56)).

---

[38] Note that, unlike *tarnishing*, *disputing* phases primarily target the object of study.

(3.56) a second **antidepressant** <u>with a different and complementary mode of action to SSRIs or SNRIs</u>.

To exemplify a potentially effective strategy, this is followed by an implicit 'similarity: rework' (*e.g.*) connexion, which introduces the figures elaborating on the strategy of using the instrumental thing *mirtazapine* (see Fig. 3.9). As shown in (3.57), the writer relates the qualities *additive* and *synergistic* to the enacted activity *action with SSRIs and SNRIs*, saturating a positive evaluative prosody of *mirtazapine* (i.e., BMJ-2's object of study).

(3.57) **Mirtazapine**… has the potential for an **additive** and perhaps **synergistic action with SSRIs and SNRIs** and could **enhance** clinical response

In addition, *mirtazapine* is given agency in the occurrence *enhance*, which inscribes '+valuation' to the observational activity entity *clinical response*. To justify the BMJ-2 trial, however, these evaluative propositions are only 'entertained' via modality (*has the potential*, *perhaps*, *could* in (3.57)). Furthermore, the 'fulfilment: actualisation' of the knowledge building process is 'countered' through concession and the co-elaboration between the enacted activity *trials* and negatively assessed *results* (see (3.58)).

(3.58) (*However*) Four trials have been carried out… and they had **mixed** results.

In the narrowed dataset, the in-depth analysis has identified two instances of the discussion genre realising the Evidence stage – BMJ-2's Evidence (analysed above) and LANCET-1's Evidence B. In both cases, the Position stage is followed by two Perspectives: one supporting the initial view and the other one opposing it. Scaffolding the generic structure, 'similarity: rework' (*i.e.*, *e.g.*) connexions were found to saturate positive/negative evaluative prosodies, whereas 'consequence: concession' (*however*) and 'difference: retract' (*on the other hand*) were identified as resources for shifting between positive and negative assessments. Therefore, writers can embed a discussion genre to create a research gap by identifying the strengths and weaknesses of the field as well as the object of study. When compared to embedded expositions, a decision to introduce evidence that negatively evaluates a treatment strategy suggests a lower degree of assertiveness in warranting new research. However, this thesis refers to embedded discussions as another means of reserved treatment promotion because the purpose of negative assessment is to justify the need for further research rather than discredit a potential remedy.

3.3.1.3 Warranting new research through challenge

Among the research warrants in the narrowed dataset, those that aim to justify a trial of non-pharmacological interventions (n=4) were found to incorporate two Evidence stages:

1. Evidence A, which opposes a positive *view* on a treatment strategy; and

2. Evidence B, which promotes a positive *view* on the treatment strategy under investigation.

While the latter stage can be performed by an embedded exposition (BMJ-1, JAMA-2, NEJM-1) or discussion (LANCET-1), the former stage is always realised by an embedded challenge genre. To explore how and why RCT report writers choose to oppose a particular *view* on disorder management, this section uses the Evidence A stage in BMJ-1's research warrant as a starting point (see Table 3.6).

Table 3.6: The embedded challenge functioning as the Evidence A stage in BMJ-1's research warrant.

Evidence A *[[[[challenge]]]]*	Text (BMJ-1)
Position *view*	Guidance from the National Institute for Health and Clinical Excellence (NICE) recommends that adults should be offered the choice of either a course of a selective serotonin response inhibitor or specialised CBT that deals with the key features of the disorder.[17]

Counter-arguments
  dispute
 	
  burnishing
	There is, however, a gap between supply and demand of CBT because of various factors, such as a lack of trained therapists, direct and indirect costs associated with treatment, and geographical barriers that prevent people with body dysmorphic disorder from receiving specialized CBT.[18-20] In two surveys, only 10-17% of people with body dysmorphic concerns reported that they had received an empirically supported psychotherapy (such as CBT), and 19-34% reported that they had received an SSRI.[19,20]

Counter-position *view*	Thus, one of NICE's key priorities for implementation – namely, that each primary care trust, mental healthcare trust, and children's trust that provides mental health services should have access to a specialist multidisciplinary team offering age appropriate care – is currently far from reality.[17] The growth in demand for mental healthcare exceeds available National Health Service (NHS) resources in the United Kingdom, and this gap is likely to increase up to 2020.[21] Cost pressures require that providers find innovative ways to deliver services.

In BMJ-1's challenge, there are three stages: Position, Counter-arguments, and Counter-position. Like the other argumentative genres functioning as Evidence stages, BMJ-1's challenge tends to foreground the field of study by giving thematic prominence to semiotic proof/locutions (*evidence*, *guidance*), institutions (*NICE*), and the enacted activity entities involved in the knowledge building process (*survey*).

As shown in Table 3.6, the opening Position stage establishes a dominating positive prosody of *SSRIs* and *CBT*. As shown in (3.59), this is achieved through the figure position *recommends*, which 'attributes' '+valuation' to the *NICE* as the institution with competent authority.

(3.59) Guidance from the National Institute for Health and Clinical Excellence (NICE) **recommends**… **a course of a selective serotonin response inhibitor [SSRI] or specialised CBT that deals with the key features of the disorder**.

The start of the Counter-arguments stage, however, indicates a shift from the positive to the negative assessment of the recommended medical practice. The primary purpose of BMJ-1's Counter-arguments is to provide a negative treatment evaluation in order to *dispute* the opening *view*. This is achieved through:

- heteroglossic 'countering', which is realised as a 'consequence: concession' (*however*) connexion; and
- a monoglossic 'reinforced assertion', which relies on the evidence found in the publications [18-20] (see Fig. 3.10).
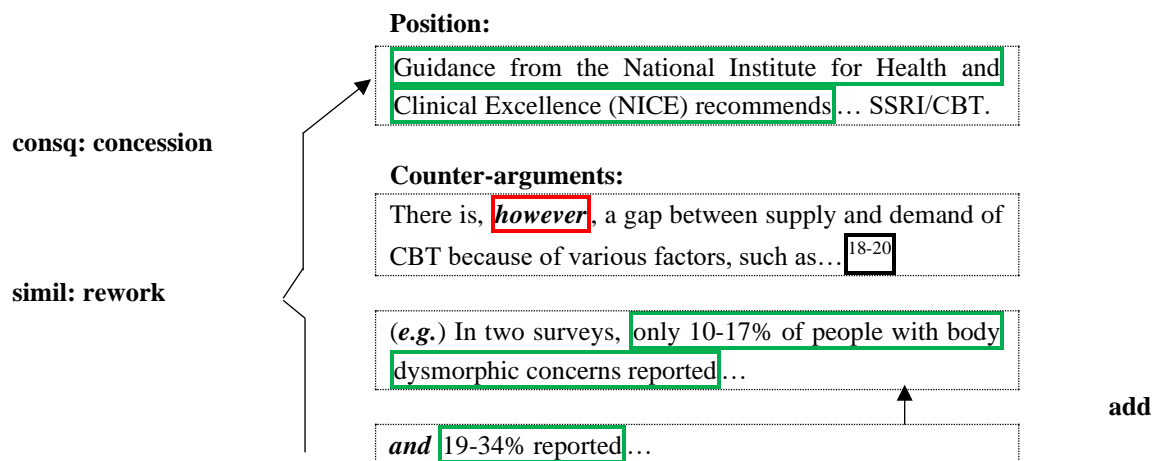
Figure 3.10: CONNEXION and ENGAGEMENT analyses of the challenge (Position and Counter-arguments) functioning as Evidence A in BMJ-1's research warrant.

To saturate a negative prosody through heteroglossic 'attribution', the counter-argumentative stage also uses an implicit 'similarity: rework' (*e.g.*) to introduce two positioned occurrence figures, which elaborate on the evidence (see Fig. 3.10).

To begin with, a presented state figure is used to identify *a gap between demand and supply of CBT*, which inscribes '-composition: balance' of the enacted activity entity *CBT implementation*. Then, the writer employs a semiotic results entity (*factors*) to advance the negative prosody, which is comparable to using causality for establishing topic significance (see Section 3.2.1). As illustrated in Figure 3.11, a graduated 'amount' (*several*) of *factors* uses external causality to link '-composition: balance' of *CBT implementation* to the negative assessments of treatment *therapists*, *cost*, and *geographical positioning*. In the first case, a down-scaled 'amount' of *trained therapists* inscribes '-capacity' of the observer entities, which in turn reinforces '-valuation' of *CBT implementation*. Similarly, *costs* and *barriers* are utilised to inscribe '-valuation' of *CBT* as expensive and inaccessible.
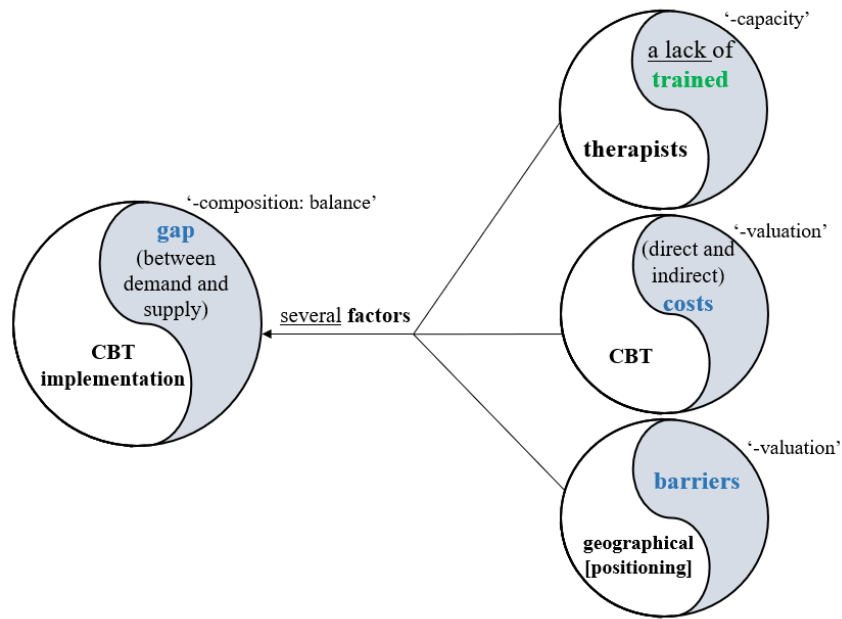
Figure 3.11: Saturating a negative evaluative prosody of medical practice via causality.

To continue saturating '-composition: balance' of both *CBT* and *SSRI implementation*, the counter-argumentative stage finishes with the findings of the enacted activity entity *survey*. The inclusion of the numeral *two* to graduate the 'amount' of *surveys* can be understood as a means for increasing evidence credibility, which signals a *burnishing* phase (see (3.60)).

> (3.60) In <u>two</u> **surveys**, <u>only 10-17%</u> of **people with body dysmorphic concerns** [-security] reported that they had received an empirically supported psychotherapy (such as CBT), and <u>19-34%</u> reported that they had received an SSRI.

As shown in (3.60), there is a down-scaled 'amount' (*only 10-17%; 19-34%*) of the observed people (*people with BDD concerns*) benefiting from *CBT/SSRI*, which emphasises the need for finding an alternative treatment strategy for body dysmorphic disorder (BDD).

Following Counter-arguments, BMJ-1's challenge ends with Counter-position as a logical and evidence-based conclusion (see Fig. 3.12).
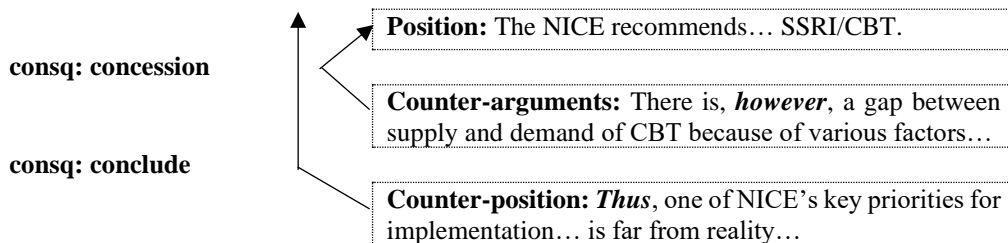
Figure 3.12: Inter-stage connexions in the challenge functioning as Evidence A in BMJ-1's research warrant.

Functioning as macroNew of the challenge, the purpose of this stage is to reiterate the negative assessment of *CBT* as inaccessible and expensive, providing a heteroglossic 'justification' for opposing the initial recommendation. As indicated in (3.61), BMJ-1's Counter-position

includes a 'reinforced assertion' that inscribes '-valuation' of the instrumental thing *NHS resource* by indicating its down-scaled 'amount' (*exceeded*).

> (3.61) The growth in **demand for mental healthcare** exceeds **available** National Health Service (NHS) **resources** in the UK and this **gap** is likely to increase up to 2020. [21]

To reaffirm inaccessibility, this is accompanied by an evaluated figure that 'entertains' (*is likely* in (3.61)) an even more intensified 'amount' of the demand-supply *gap*. As the BMJ-1 report was published in a British journal in 2016, the emphasised 'extent: space/time: proximity' of the information is also likely to raise interest of its target audience (*NHS...in the UK, up to 2020* in (3.61)). As shown in (3.62), the writer completes the challenge by using *cost* to characterise *pressure*, which re-establishes *treatment costs* as an obstacle in implementing CBT.

> (3.62) **Cost pressures** **require** that providers find **innovative ways to deliver services**.

In addition to using the quality *innovative* to inscribe '+valuation' of the *required* treatment strategies, the Counter-position stage employs 'intensified modality' (i.e., *requirement*) to foreshadow Evidence B's promotion of utilising technological advancements in treating BDD.

The generic and discourse semantic features of BMJ-1's challenge were found across the narrowed dataset of non-pharmacological research warrants (BMJ-1, JAMA-2, LANCET-1, and NEJM-1). As shown in this section, the embedded challenges, which function as the Evidence A stages, do not reject the recommended guidelines in their entirety. Instead, they focus on the limitations of treatment strategies by using a set of measured entity dimensions as evaluative criteria (e.g., graduating *CBT access* and *cost* in BMJ-1). Therefore, the purpose of the challenge genre is to create a new research space by identifying the issues with an object of study. Based on the analysis of evaluative couplings, these issues appear to be carefully selected to match the strengths of a treatment strategy that is promoted in the Evidence B stage. In other words, the entity dimensions that are measured to negatively evaluate the interventions in the embedded challenges correspond to those measured to positively evaluate the alternative interventions in the subsequent expositions/discussions. To illustrate, Figures 3.13-16 provide an overview of the Evidence A and B evaluative couplings that contain the objects of study.
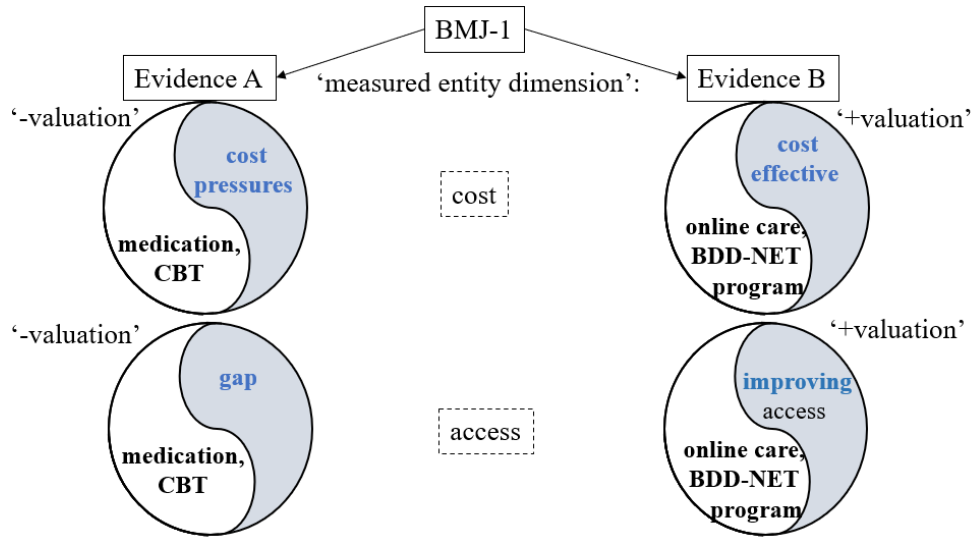
Figure 3.13: Evaluating the objects of study in Evidence A and B stages of BMJ-1's research warrant.
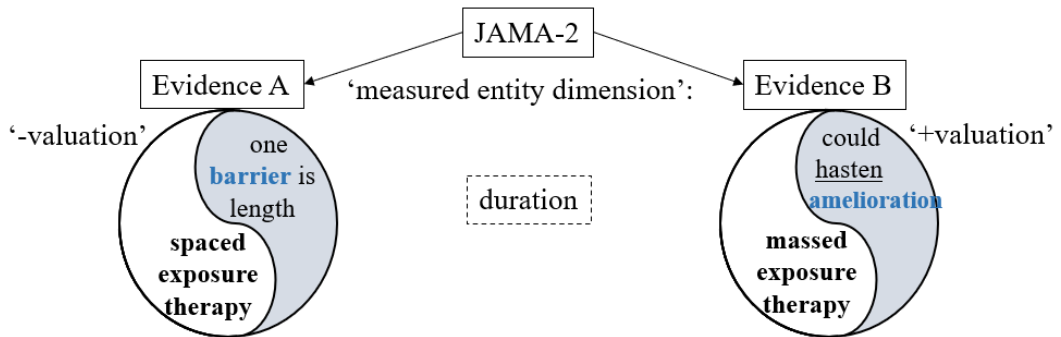
Figure 3.14: Evaluating the objects of study in Evidence A and B stages of JAMA-2's research warrant.
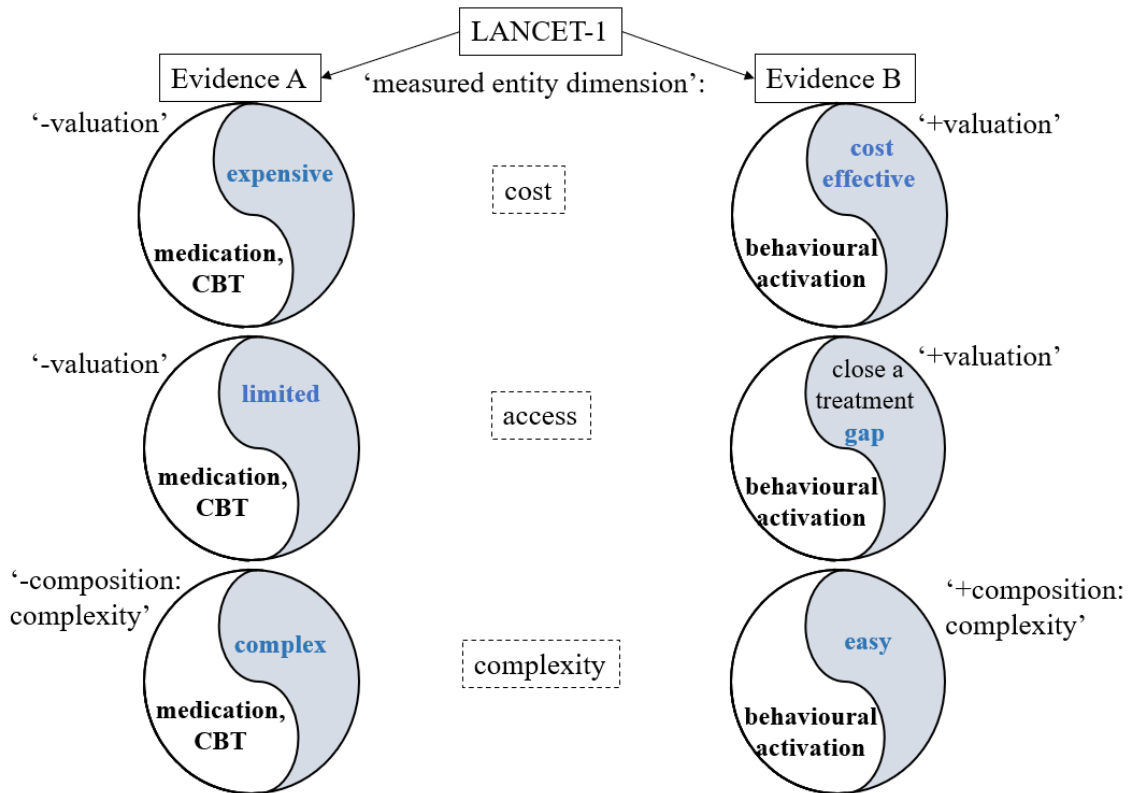
Figure 3.15: Evaluating the objects of study in Evidence A and B stages of LANCET-1's research warrant.
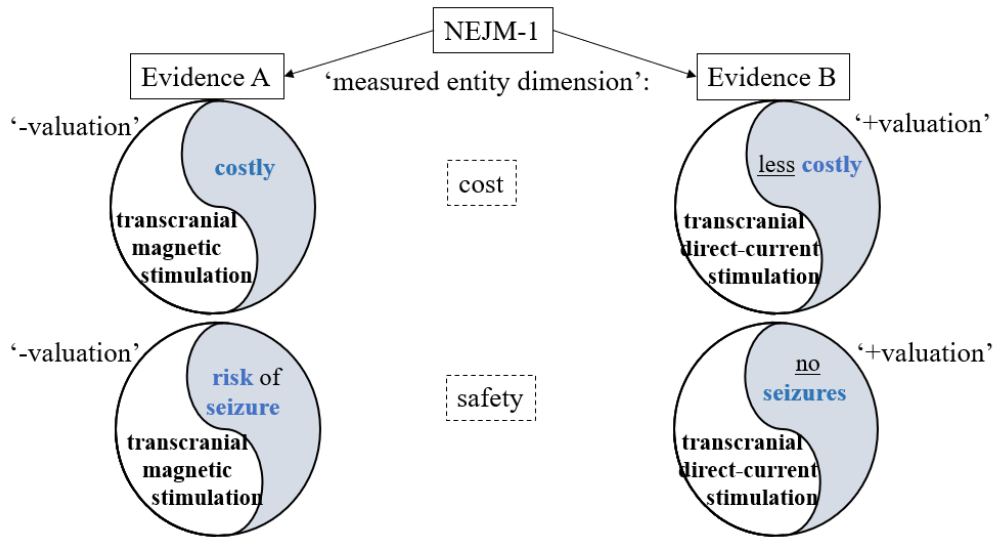
Figure 3.16: Evaluating the objects of study in Evidence A and B stages of NEJM-1's research warrant.

As shown in Figures 3.13-16, Evidence A uses a challenge to identify one or more issues by graduating the following dimensions of the enacted activity entity *treatment*: (a) <u>*high*</u> cost/complexity/duration; and/or (b) <u>*low*</u> access/safety. In turn, this justifies the writer's shifting to a different field of study that investigates an alternative *treatment* with a potential to address the identified issues.

3.3.1.4 Concluding remarks

Based on the analyses presented in Sections 3.3.1.1-3., it can be concluded that RCT report writers opt to employ an argumentative genre as an Evidence stage with a view to promoting or opposing an evidence-based *view* on disorder management. Depending on the chosen genre, the writers can review a carefully selected body of research that appraises a treatment strategy: (a) either positively (exposition) or negatively (challenge); or (b) both positively and negatively (discussion).

Furthermore, it was found that the research warrants for a pharmacological RCT report use one promotional stage, whereas those warranting a non-pharmacological RCT tend to oppose a *view* before promoting an alternative. Since medication and psychotherapy originate from different fields – medicine and psychology – this may suggest a variation in warranting multidisciplinary research depending on whether it favours a medical or a psychological approach. A corpus-based study would need to be conducted to validate or disprove this assumption.

3.3.2 Describing evidence

To illustrate the process of creating a research gap via a descriptive report, this section takes a closer look at the Evidence stage in NEJM-2's research warrant (see Table 3.7). This realisation

represents the only identified instance of a descriptive report functioning as Evidence, which is in contrast with Hood's (2010) dataset of research warrants that favour reports when reviewing literature. In NEJM-2, the onus of research justification lies with a detailed description and evaluation of a particular line of enquiry (i.e., field of study) that the writer wishes to pursue – *RCTs of prazosin in treating chronic combat-related PTSD*. As shown in Table 3.7, the NEJM-2 report comprises two stages (Identification and Description), giving thematic prominence to enacted activity *trial*.[39]

Table 3.7: The embedded descriptive report functioning as the Evidence stage in NEJM-2's research warrant.

Evidence [[[[descriptive report]]]]	Text (NEJM-2)
Identification *burnishing*	Six randomized, placebo-controlled clinical trials, in which the number of participants ranged from 10 to 100, showed moderate to large effects of prazosin in alleviating chronic nighttime PTSD symptoms and in improving overall clinical status.[10-15]
Description *participants* *findings* ("*elaborating the initial burnishing*") *limitations* (*cf. tarnishing*)	Four trials involved U.S. military veterans or active-duty service members, one involved U.S. civilians, and one involved both Iranian military veterans and Iranian civilians. Three trials showed benefits [of using prazosin] with respect to trauma-related nightmares, change in overall clinical status, and total PTSD symptoms[12,14,15]; two showed benefits [of using prazosin] with respect to trauma-related nightmares, sleep quality, and change in overall clinical status[10,11]; and one showed benefits [of using prazosin] with respect to sleep quality and daytime PTSD symptoms.[13] However, the duration of these positive trials was shorter than 15 weeks, and the trials were of moderate size. There are limited data on the ability of prazosin to have sustained efficacy for chronic PTSD symptoms over longer periods.

Like the Position stage in the embedded argumentative genres, the opening Identification stage serves as macroTheme, foreshadowing the experiential content and establishing dominating evaluative prosodies. Ideationally, it is realised by a positioned extended state figure, with the enacted activity *trial* as the position source (see (3.63)).

(3.63) Six randomized, placebo-controlled clinical trials…showed moderate to large effects of prazosin…

Ideationally, (3.63) relates the qualities *moderate* and *large* to the semiotic result entity *effects*. Interpersonally, the position *showed* indicates heteroglossic 'endorsement', which extra-vocalises the assessment of the object of study and indicates the writer's alignment with the field of study.

To initiate and advance the assessment of the object of study, the writer uses entity qualification (see (3.64)).

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[39] In this instance, the purpose of Identification (i.e., there are six trials…) is closely related to that of Classification (i.e., these are six trials…), which is more characteristic of descriptive reports.

(3.64) the effects of prazosin [[in alleviating chronic nighttime PTSD symptoms and on improving overall clinical status]]

By embedding a qualifying clause, (3.64) inscribes '+valuation' of the *effects* and, through external causality, the instrumental thing *prazosin* (see Fig. 3.17).
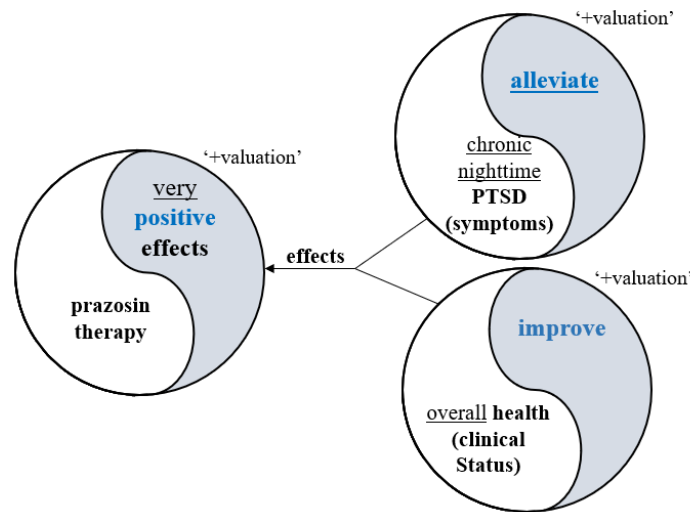
Figure 3.17: Saturating a positive evaluative prosody of medical practice via causality.

As illustrated in Figure 3.17, the semiotic result *effect* links *prazosin* therapy to the positive assessments of *PTSD symptoms* and *clinical status*. First, a down-scaled 'amount' of the characteristic entity *PTSD* entails '+capacity' of the 'observed people' (*those with PTSD*), which in turn inscribes '+valuation' of the *effect*. To amplify the impact of this positive effect and highlight its relevance to the NEJM-2's trial, *PTSD* is also graduated in terms of 'extent: distribution: time' (*chronic nighttime*). Furthermore, an inscribed '+valuation' of the characteristic *health* as *improved* is employed to indicate '+valuation' of the second *effect*, whose scope is also augmented by broadening 'valuer: specificity' (*overall*) of *clinical status*. Ultimately, it is the joint evaluation of both effects as *very positive* that inscribes an intensified '+valuation' of the object of study – *prazosin therapy*. Pushing this positive prosody even further, the 'amount' of the positive *effects* is up-scaled as *moderate to large* (see (3.65)).

(3.65) moderate to large **effects of prazosin**

To establish a dominating evaluative prosody of the field of study, the writer employs entity quantification, characterisation, and elaboration, as well as figure positioning (see (3.66)).

(3.66) Six randomized, placebo-controlled **clinical trials**, in which the number of **participants** ranged from 10 to 100, **showed**…

As shown above, the enacted activity entity *clinical trial* is graduated in terms of 'amount' (*six*) and 'valeur: specificity' (*randomised, placebo-controlled*), which flags '+valuation'. More precisely, characterising the *trials* as *RCTs* indicates a "gold standard", while the existence of multiple *RCTs* raises their credibility. In addition, the *clinical trials* are elaborated through a

clause that quantifies the 'amount' (*from 10 to 100*) of the observed people (*participants*). In doing this, the writer provides the reader with the opportunity to evaluate the size of the conducted research. Lastly, the position *showed* is employed to flag '+valuation' of the *trials* by indicating a high degree of knowledge 'fulfilment: actualisation'.

Unlike the argumentative stages, however, the following Description stage does not rely on additional evidence to promote or oppose the findings. Instead, it contains three descriptive phases – *participants*, *findings*, and *limitations* – that expand upon the identified body of research in order to review the knowledge building process.

In the first descriptive phase, there is a list of 'state' (*include*) figures that co-elaborate *the number of trials* with the observed people entities (see (3.67)).

(3.67) Four trials $\boxed{\text{involved}}$ U.S. military veterans or active-duty service members…one $\boxed{\text{involved}}$ US civilians…***and*** ['addition'] one $\boxed{\text{involved}}$…

As can be seen in (3.67), this phase provides additional information on trial *participants* with reference to their location and combatant status. Such characterisation builds a classification taxonomy of participants, which carries important implications for saturating a positive evaluation of the existing research (see Fig. 3.18).

Figure 3.18: Trials of prazosin for treating chronic night-time PTSD: a classification taxonomy of participants.

Since NEJM-2's participants include US veterans with combat-related PTSD, the place entities *US/Iran* and the people entities *military veterans/active-duty service members/civilians* emphasise the 'extent: proximity: space' and 'valeur: specificity' of *participants* relative to the NEJM-2 trial. Such use of graduation resources is analogous to the persuasion strategy wherein topic significance is raised by graduating the 'extent: proximity: space' of the affected population relative to the trial's participants and/or target readership (see Section 3.2.2). In other words, due to the extent of the US and Iran's military conflicts, it is reasonable to assume that NEJM-2's participants are likely to have witnessed combat-related events that are similar and/or comparable to those experienced by the participants of the identified trials. As a result, it can be hypothesised that the positive effects of prazosin found in these *six trials* will also be identified in the NEJM-2 trial, which increases the significance ('+valuation') of the field of study.

To elaborate on the research *findings* identified in the opening stage, the second descriptive phase lists metaphorically realised occurrence figures that are both positioned (*the trials showed*) and evaluated (*it is beneficial*) (see (3.68)).

(3.68) **Three trials showed** it is **beneficial** to use **prazosin** for…; **two showed** it is **beneficial** to use **prazosin** for…; *and* ['addition'] **one showed** it is **beneficial** to use **prazosin** for…

As indicated in (3.68), these figures represent valuable interpersonal resources for continuing the positive prosodies of the object and the field of study, which makes this phase comparable to *burnishing* in argumentative stages. That is, the content of figure augmentation (*show, beneficial*) is used to inscribe as well as externalise '+valuation' of an enacted activity (*strategy*) that entails *using prazosin*. Concurrently, heteroglossic 'endorsement' indicates the writer's alignment and underlines knowledge 'fulfilment: actualisation', which flags '+valuation' of the *trials*.

In the final phase, however, there is a list of state figures introduced via internal 'consequence: concession' (*however*) connexion, which elaborates on research *limitations* (see Fig. 3.19).
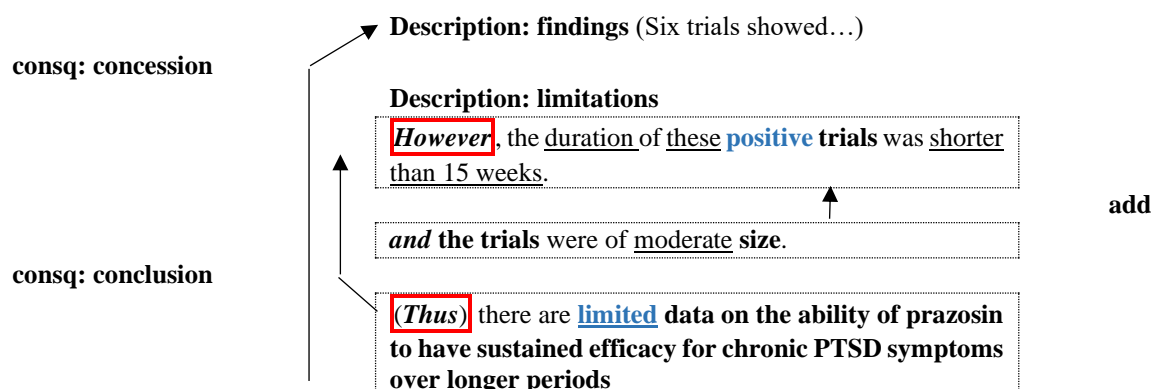
Figure 3.19: CONNEXION *and* APPRAISAL *analyses of research limitations in the Description stage of the descriptive report functioning as Evidence in NEJM-2's research warrant.*

As illustrated in Figure 3.19, this phase shifts the positive prosodic value of the field of study to negative (cf. *tarnishing* in Humphrey & Hao, 2013). In the first two figures, the down-scaled dimensions – *duration* (*shorter than 15 weeks*) and *size* (*moderate*) – are employed to flag '-valuation' of the *trials*. This is reinforced by the concluding figure, which graduates the 'amount' of the semiotic result *data* as *limited*, inscribing another '-valuation'. Lastly, the writer uses *data* qualification to tailor the research space to the aims of the NEJM-2 trial, which investigates *the ability of prazosin to have sustained efficacy for chronic PTSD symptoms over longer periods*.

In conclusion, the descriptive report functioning as Evidence in NEJM-2's research warrant identifies and expands on a promising body of research. It uses inscribed '-valuation'

and external causality to saturate a positive evaluation of *mirtazapine* as the object of study. To invoke or describe both positive and negative assessment of the existing RCTs of prazosin in treating PTSD, it uses a variety of APPRAISAL resources to target the trial participants, findings, and limitations. Therefore, the descriptive report seems to create a research gap by identifying the strengths and weaknesses of the field of study, which is similar to the reserved promotions found in the embedded expositions.

3.3.3 Using evidence to explain a phenomenon

The Evidence stages analysed so far focus on the field of study that examines the effectiveness of interventions in treating psychiatric disorders, which makes their perspective on the object of study static. By contrast, LANCET-2 has opted to review research that investigates the underlying causes of post-partum depression, adopting a dynamic perspective on mental health outcomes. To construe the Evidence stage, the writer embeds a factorial explanation genre, which outlines the different factors leading to the same outcome (cf. *factorial explanations* in Martin & Rose, 2008). The use of evidence to explain a phenomenon has also been observed in Humphrey and Hao's (2013) sample of undergraduate biology experimental reports. Their study concludes that students use evidence to demonstrate their knowledge on the object of study, thus "build[ing] an authoritative tenor relationship" with the readership (Humphrey & Hao, 2013, p. 47). In LANCET-2, a factorial explanation is employed to justify a trial of *brexanolone injections* in treating *post-partum depression*.

To explore how an explanatory genre can open a new research space, this section analyses the abridged LANCET-2 Evidence stage with reference to its internal generic structure and discourse semantic features (see Table 3.8).

Table 3.8: The abridged embedded factorial explanation functioning as the Evidence stage in LANCET-2's research warrant.

Evidence *[[[[factorial explanation]]]]*	Text (LANCET-2)
Phenomenon *burnishing*	Findings from several studies implicate peripartum fluctuations in reproductive hormones (in particular, allopregnanolone) having pivotal pathophysiological roles in post-partum depression.[14–17]
Factor 1 *cause-effect* *disputing*	Allopregnanolone, a potent positive allosteric modulator of GABAA receptors,[17,18] has been shown to have profound effects on anxiety and depression in animal models.[17,19–21] Plasma allopregnanolone concentrations rise in concert with progesterone throughout pregnancy, reaching the highest physiological concentrations in the third trimester.[22] After childbirth, these concentrations decrease abruptly.[23] Failure of GABAA receptors to adapt to these changes at parturition has been postulated to have a role in triggering post-partum depression.[24,25] Alterations in concentrations or ratios of serum allopregnanolone and other neuroactive steroids have been reported in some,[23,26] but not all,[27] women at risk for or who develop post-partum depression.

Factor 2 *cause-effect* *conceding*	Moreover, symptoms of post-partum depression are precipitated in at-risk women by recreating hormonal fluctuations associated with pregnancy and delivery.[14] For some women, onset of mood symptoms occurs in the third trimester of pregnancy, and these symptoms can substantially worsen in the immediate post-partum period.[6,28,29] Whether this group of women are similar or different from women who have onset after childbirth is not known; however, women with onset in the third trimester are an important group to consider in terms of differential sensitivity to alterations in changing concentrations of neurosteroids during the peripartum period.
Extension *tarnishing* *burnishing* *disputing* *steps*	Although the cause of post-partum depression is not entirely understood, this collective body of work supports exploring the potential treatment of women with post-partum depression with doses of allopregnanolone that result in serum concentrations equivalent to those present during the third trimester, including women with onset of symptoms in the third trimester of pregnancy and throughout the early post-partum period. Allopregnanolone has low aqueous solubility, poor oral bioavailability, and is rapidly metabolised; however, a soluble, proprietary, β-cyclodextrin-based formulation of allopregnanolone – brexanolone – can be administered intravenously to produce stable physiological serum concentrations.

As shown in Table 3.8, LANCET-2's explanation starts with a Phenomenon stage, followed by two Factor stages and an Extension stage. Within the initial and final stages, thematic prominence is given to the field of study construed by semiotic result (*findings*) and enacted activity entities (*body of work*), which is in line with the other genres functioning as Evidence. To facilitate explanation, however, Factors 1 and 2 foreground the entities that have been found to lead to *post-partum depression outcomes,* which is the object of study. In these stages, the field of study is usually realised implicitly through a combination of figure positioning and publication entities (e.g., *has been shown…* [17, 19-21]).

Serving as textual macroTheme, Phenomenon introduces the explanatory genre and establishes dominating evaluative prosodies by *burnishing* a promising line of research. Ideationally, it is realised by a positioned enhanced state figure that sets up a causal correlation (*have a role*) between the observational activity entity *peripartum fluctuation in reproductive hormones* and the characteristic entity *post-partum depression* (see (3.69)).

(3.69) Findings… implicate peripartum fluctuations in reproductive hormones having pivotal pathophysiological roles in post-partum depression.

The correlation *have a pathophysiological role* is described as *pivotal*, which underlines its significance. Interpersonally, this represents one of the key resources for demonstrating the importance of the presented evidence (see (3.70)).

(3.70) **Findings** from several **studies implicate** peripartum **fluctuations in reproductive hormones** (in particular, allopregnanolone) having **pivotal pathophysiological roles** in post-partum depression.

In (3.70), the position *implicate* indicates 'endorsement' of a proposition on the potential causes behind *post-partum depression*. In conjunction with an up-scaled 'amount' (*several*) of *studies*,

the 'endorsement' flags '+valuation' of the field of study. Within the 'endorsed' proposition, *fluctuations* inscribe '-composition: balance' of the measured observational things – namely *reproductive hormone* and *allopregnanolone concentrations*. At the same time, however, the fact that there are *fluctuations* implies that the same entities can be used as measured instrumental things - namely *doses of reproductive hormones* – to offset an imbalance of *hormone concentrations*. In turn, this flags '+valuation' of an enacted activity (*strategy*) that would involve using *reproductive hormones*. To amplify the importance of this evidence, the writer describes the *role* of *hormone concentrations* in regulating *post-partum depression* as *pivotal*. In addition, a positive prosody of LANCET-2's object of study, the instrumental thing *allopregnanolone*, is further augmented by sharpening 'valeur: specificity' (*in particular*).

The Phenomenon stage is followed by two elaborating Factor stages, which review the existing research on the phenomenon of post-partum depression (see Table 3.8). Both stages start with *cause-effect* phases, which are succeeded by the evaluative phases that identify important research gaps.

The Factor 1 stage explains and reviews the causal links between *allopregnanolone* and *post-partum depression outcomes*. To introduce the relevant field of study, the writer uses 'reinforced assertions' ([22],[23]) as well as figure positions that 'endorse' (*has been shown/postulated*), 'acknowledge' (*have been reported*), or 'counter' (*however*) the existing studies (see Fig. 3.20).
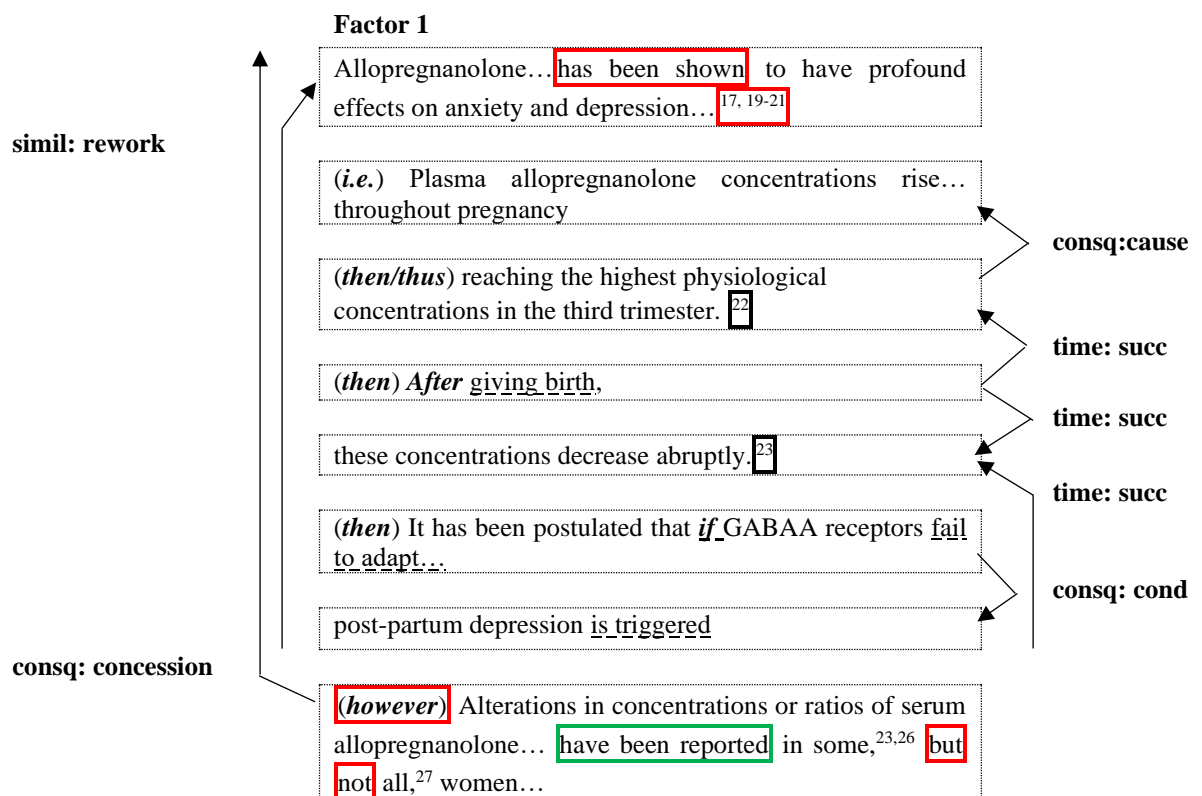
Figure 3.20: CONNEXION *and* ENGAGEMENT *analyses of the Factor 1 stage of the factorial explanation functioning as Evidence in LANCET-2's research warrant (with* <u>unpacked grammatical metaphors</u>*).*

To elaborate on the *effects* of *allopregnanolone on anxiety and depression*, the writer introduces a causal sequence of observational occurrence figures via an implicitly realised internal 'similarity: rework' (*i.e.*) connexion. As indicated in Figure 3.20, occurrence sequencing is scaffolded through external 'time: successive' (*then, after*) and 'consequence' (*thus, if*) connexions. [40] Furthermore, occurrences are often accompanied by temporal locations/distribution (e.g., *in the third semester/throughout pregnancy*) and/or qualities (e.g., *abruptly*), which adds scientific precision. Ideationally, these findings are in accordance with the existing SFL scholarship on explanatory scientific discourse (e.g., Halliday & Martin, 1993; Hao, 2020a; Martin & Rose, 2007, 2008).

Like the Phenomenon stage, the Factor 1 sequence uses external causality as an interpersonal resource, saturating a positive prosody of the object of study (see (3.71)).

> (3.71) **Allopregnanolone,** a **potent positive allosteric modulator [PAM]** of GABAA receptors has been shown to have profound **effects on anxiety and depression**… **Failure** of GABAA receptors to adapt… has been postulated to have a role in triggering post-partum depression.

In (3.71), *allopregnanolone* is co-elaborated with the instrumental thing *potent PAM*, setting up a classification taxonomy and inscribing '+valuation' (*allopregnanolone* → type → *potent PAM*). To advance the positive prosody, *PAM* is qualified using the observational thing *GABAA receptors*, which suggests a highly targeted treatment ('valeur: specificity'). In other words, *doses of a GABAA receptor modulator* have the potential to be an effective treatment because it is *failure of GABAA receptors to adapt* ('-valuation') that *triggers post-partum depression*. Furthermore, the correlation *to have profound effects*, which subsumes the meaning of an amplified 'amount' of the semiotic entity *effects*, serves to augment the overall positive prosody of *allopregnanolone*.

To introduce a critical evaluation of the Factor 1 evidence, the construed implication activity series is accompanied by a *disputing* phase, which starts with an implicit 'consequence: concession' (*however*) connexion (see Fig. 3.20 and (3.72)).

> (3.72) Allopregnanolone… has been shown to have profound **effects**… (however) Alterations in concentrations or ratios of serum allopregnanolone and other neuroactive steroids have been **reported** in some,[23,26] but **not** all,[27] **women at risk for or who develop post-partum depression**.

Interpersonally, (3.72) employs dialogic positioning and graduation resources to create research space. Specifically, 'countering' (*however, but*) is employed to switch from highlighting to downplaying the *effects* of *allopregnanolone*. Furthermore, a 'denial' of *allopregnanolone*

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[40] Note that the relational process *have a role* can realise a correlation between two entities (e.g., observational activity entity *allopregnanolone fluctuation* correlates with the characteristic entities *anxiety and depression*) or represent a logical metaphor linking two figures (e.g. *failure of GABAA receptor to adapt has a role in triggering of post-partum depression*).

fluctuations in *all women* aims to dispute the universality of the role of *allopregnanolone* in *post-partum depression*. Like the *dispute* phases found in argumentative genres, the goal of this rhetorical manoeuvre is not to dismiss a treatment strategy. Instead, it is aimed at justifying further trials that involve *women at risk for or who develop post-partum depression* as the observed people.

Following Factor 1, an internal 'addition' (*moreover*) connexion is employed to link the Factor 2 stage, which elaborates on the role of *pregnancy/delivery-related hormone fluctuations* in *post-partum depression outcomes* (see Fig. 3.21).
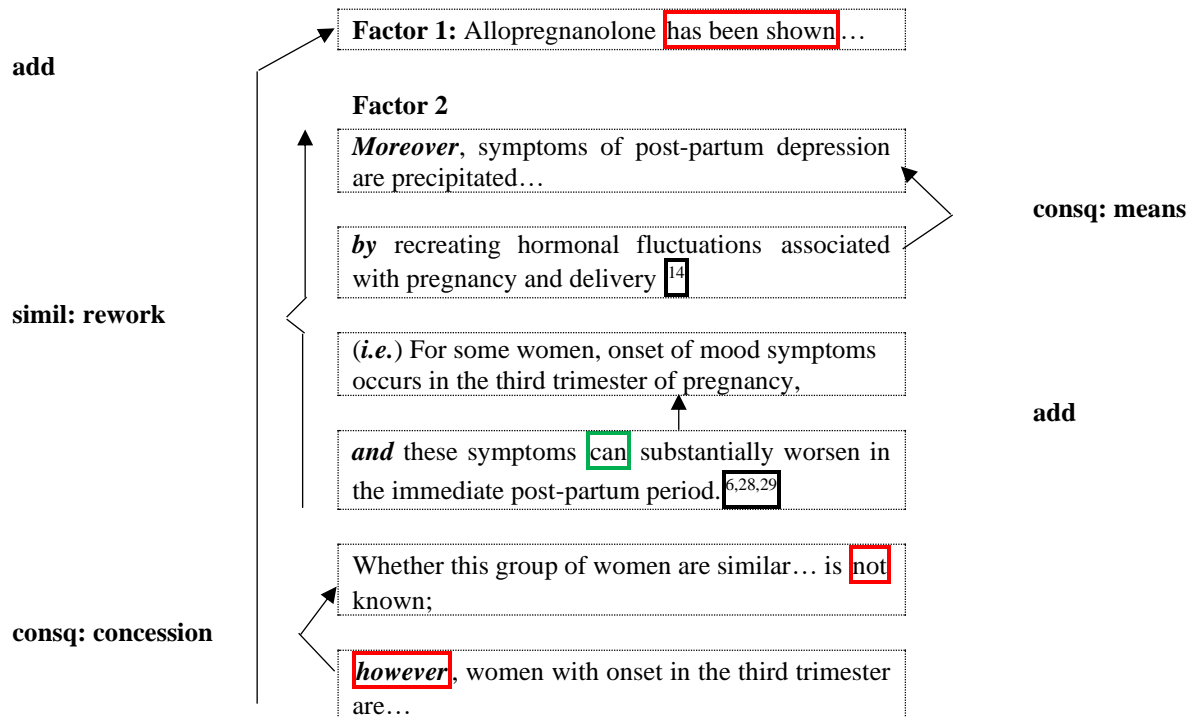
Figure 3.21: CONNEXION *and* ENGAGEMENT *analyses of the Factor 2 stage of the factorial explanation functioning as Evidence in LANCET-2's research warrant.*

As shown in Figure 3.21, the language resources in the Factor 2 stage are rather similar to those realised in Factor 1. These include external 'consequence' (*by*) connexions and correlations (*be associated with*), which facilitate causal sequencing. To introduce more details, the links also include an internal 'similarity: rework' (*i.e.*) connexion, while occurrence figures incorporate qualities (*substantially worsen*) and temporal locations (e.g., *in the third trimester of pregnancy*). Furthermore, external causality is used as an inherent part of the evaluative strategy (see (3.73)).

> (3.73) symptoms of post-partum depression are precipitated in at-risk women **by** recreating **hormonal fluctuations**… **these symptoms** can substantially **worsen**…

In (3.73), the consequential connexion *by* and the occurrence *precipitate* identify the observational activity *hormonal fluctuations* as a possible cause of *post-partum depression*, which inscribes '-composition: balance'. To advance this assessment, the semiotic proof *symptom* is also negatively evaluated by 'entertaining' an 'intensified occurrence' *substantially*

worsen through modality (*may*). Ultimately, the saturated negative prosody of *hormone concentrations* serves to underscore the need for a trial of hormone treatments that could restore balance.

To further mould the research space for the LANCET-2 trial, the following *conceding* phase reviews knowledge 'fulfilment: actualisation' with reference to the observed people entity *women with post-partum depression* (see (3.74)).

> (3.74) Whether this group of women are similar or different… is **not known**; however , **women with onset in the third trimester** are an **important** **group** to consider in terms of differential sensitivity to alterations in changing concentrations of neurosteroids during the peripartum period.

Initially, a heteroglossic 'denial' (*not known*) is used to flag '-valuation' of the existing trials that have included *women with onset in the third trimester*. While this does warrant further study of the underlying causes, it also acknowledges a proposition that including this subset of the affected population in an *allopregnanolone* trial may not be justified. To 'counter' this proposition, (3.74) employs 'consequence: concession' (*however*) and a co-elaborated state figure that inscribes '+valuation' of this sub-population as *an important group to consider*. Ultimately, this *concedes* the value of *this group of women* as the object of study, which promotes a decision for its inclusion in a trial of *neurosteroid treatments* such as *allopregnanolone*.

To strengthen the LANCET-2 research warrant, the factorial explanation functioning as Evidence ends with an Extension stage (textual macroNew). The Extension begins with the *tarnishing* and *burnishing* phases, which summarise the existing evidence. This is followed by a phase *disputing* the effectiveness of *allopregnanolone* before outlining the *steps* of how *brexanolone* (i.e., a type of *allopregnanolone*) *injections* can facilitate better *post-partum depression outcomes*.

In the opening evaluative phases, the writer again relies on ENGAGEMENT and GRADUATION to evaluate the field of study (see (3.75)).

> (3.75) Although the cause of post-partum depression is **not entirely understood**, this collective body of **work** **supports** [**trials**] exploring the potential treatment of women with post-partum depression with doses of allopregnanolone…

In (3.75), the first figure position (*not entirely understood*) 'denies' and down-scales knowledge 'fulfilment: actualisation', acknowledging a proposition that negatively evaluates the presented evidence. However, 'consequence: concession' (*although*) downplays the proposition, which indicates the writer's disalignment with such assessment. In addition, a maximised 'amount' of the research that has reached the same conclusion is used to flag '+valuation' in terms of evidence reliability (*this collective body of work*). Eventually, the second figure position

(*supports*) is employed to promote *trials* such as LANCET-2, 'attributing' the promotion to the positively assessed general field of study.

In the following phases, the writer negatively evaluates allopregnanolone before presenting the LANCET-2's specific object of study as a potential solution (see Fig. 3.22).
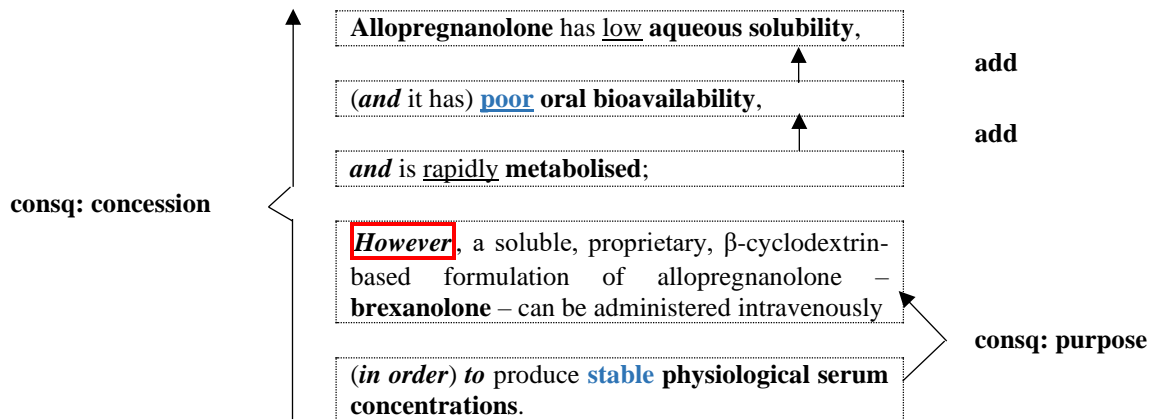
Figure 3.22: CONNEXION *and* APPRAISAL *analyses of the causal sequence in the Extension stage of the factorial explanation functioning as Evidence in LANCET-2's research warrant.*

As shown in Figure 3.22, the *disputing* phase comprises a list of three figures that identify drawbacks of using *allopregnanolone* as a potential treatment. In the first two state figures, the measured entity dimensions *aqueous solubility* and *oral bioavailability* are down-scaled as *low* and *poor*, which inscribes '-valuation' of *allopregnanolone*. In addition, the third figure uses occurrence 'intensification' (*metabolised rapidly*) that flags the inability of *allopregnanolone injections* to maintain hormonal balance. Be that as it may, the main purpose of establishing a negative prosody of *allopregnanolone* is to highlight a positive assessment of *brexanolone* as a more specific *formulation of allopregnanolone*. By sharpening 'valeur: specificity', LANCET-2's writer shifts the prosodic value from negative back to positive. More precisely, 'consequence: concession' (*however*) is used to 'counter' *allopregnanolone* assessment, flagging '+valuation' of *brexanolone*. Furthermore, this positive prosody is saturated by relating the quality *stable* to the measured observational thing *physiological serum concentrations*, which in turn inscribes '+composition: balance' to the outcome of the enacted activity *brexanolone injections*.

In summary, LANCET-2's writer focuses on the correlations between *fluctuations in reproductive hormones (in particular, allopregnanolone)* and *post-partum depression* in order to justify their trial of *brexanolone injections*. To present and review the existing evidence, the factorial explanation uses stages comprised of sequencing and evaluation, which shift between positive and negative assessments of the field (*collective body of work*) and the object of study (*allopregnanolone*, *brexanolone*). Therefore, this strategy for creating a research gap is comparable to that used in the Evidence stages construed by embedded discussions (see Section 3.3.1.2).

3.4 The Response stage

As shown in the preliminary analysis, all research warrants end with a Response stage. This stage is construed by an agentive generic component, which reflects a dynamic field perspective on research (see Section 3.1). Within the narrowed dataset, the agentive generic component is never supplanted by an embedded genre, which is in contrast with Topic significance and Evidence realisations.

In the Response stage, the writer introduces their *trial* (i.e., the specific field of study) as a logical course of action based on the existing knowledge (cf. *Purpose*, *Hypothesis*, and *Objectives* in Humphrey & Hao, 2013). In other words, the reported trial is presented as warranted because it: (a) deals with a highly significant topic; and (b) addresses an important gap in the general field of study. Likewise, the hypotheses of the trial can be considered plausible based on the reviewed evidence.

Textually, the Response stage represents macroNew of the research warrant genre. It is linked to the previous stages through internal causality, which is in accordance with Martin and Rose's (2007, 2008) observations of global (i.e., overarching) connexions in persuasive genres. The in-depth study of the narrowed dataset identified two kinds of 'consequence' connexions that can be used to signal the onset of Response in clinical psychology RCT report research warrants (see Fig. 3.23).
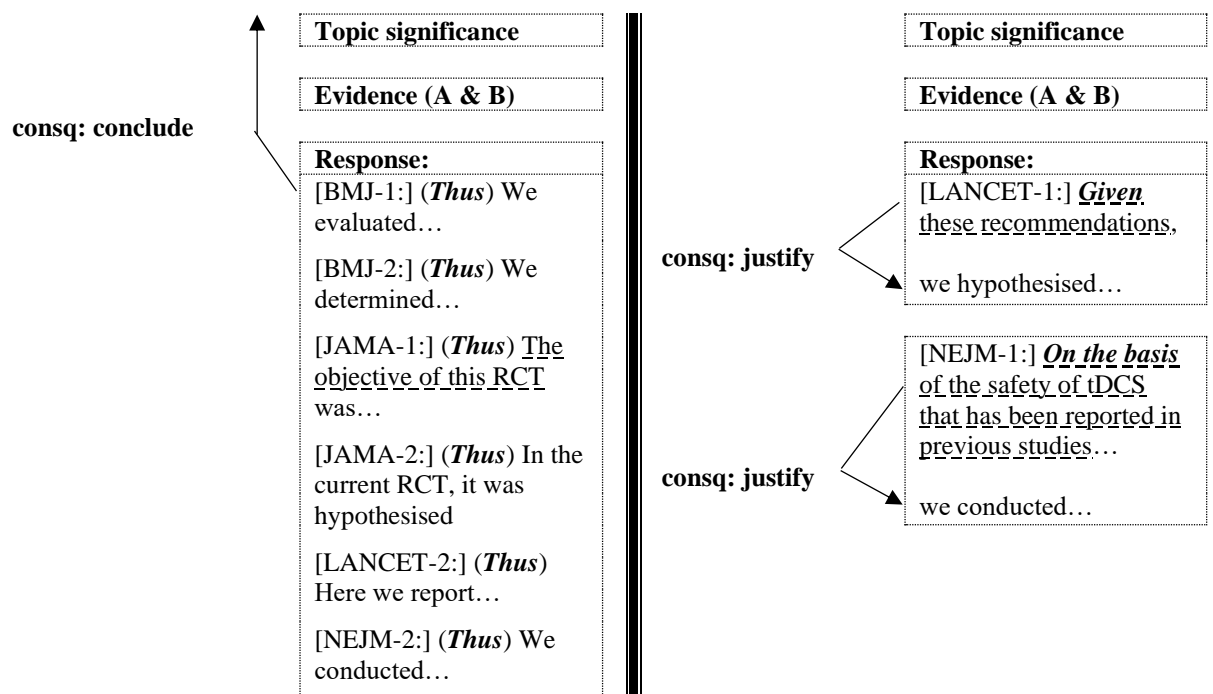
Figure 3.23: Internal connexion features introducing Response in research warrants functioning as RCT report Introductions (with marked grammatical metaphors).

As illustrated in Figure 3.23, Response can be indicated by an implicitly realised 'consequence: conclude' (*thus*) connexion.[41] Alternatively, this stage can start with a markedTheme that contains a metaphorically realised 'consequence: justify' (*given*, *on the basis of*) connexion accompanied by experiential metaphors that summarise the Evidence stages. In the latter option, ideational metaphors are employed to distil the main points into the rationale for the writer's trial. For instance, (3.76) unpacks the opening clause in LANCET-1's Response as two figures linked in terms of internal causality.

> (3.76) **_Since_** ['consequence: justify'] the existing field of study recommends…, we hypothesised… (LANCET-1)

To further comment on the discourse semantic features identified in the narrowed dataset of Responses, this section begins with the agentive generic component realising NEJM-2's Response (see Table 3.9).

Table 3.9: The agentive generic component construing Response in NEJM-2's research warrant.

Response	Text: NEJM-2
steps *hypotheses*	We conducted the Prazosin and Combat Trauma PTSD (PACT) trial to determine the efficacy of prazosin [medication] in patients with chronic combat-related PTSD who had frequent nightmares. We hypothesized that veterans randomly assigned to prazosin would have less frequent and less intense trauma-related nightmares, greater improvement in sleep quality, and greater improvement in overall clinical status (the three primary outcome measures) than veterans assigned to placebo after short-term treatment (10 weeks) and improvement in at least one of the three primary outcome measures after longer-term treatment (26 weeks).

As shown in Table 3.9, NEJM-2's Response consists of two phases: *steps* and *hypotheses*. In both phases, thematic prominence is given to the pronominal realisation (*we*) of the observer entity *investigators*, which shifts focus from the existing evidence to the reported trial.

To disclose the *steps* undertaken as a response to the needs of the medical discourse community, the writer uses a facilitation activity series realised through a temporal sequence of enacted occurrences (see Fig. 3. 24).
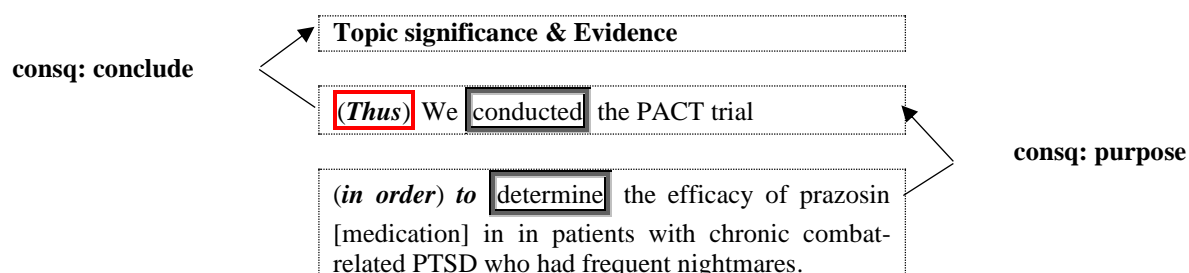
Figure 3.24: CONNEXION and ENGAGEMENT analyses of the Response facilitation sequence in NEJM-2's research warrant.

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[41] Across the entire dataset of research warrants, the preliminary analysis identified only one instance of an explicitly realised 'consequence: conclude' (*therefore*) connexion, which introduces LANCET-4's Response (*We therefore conducted…*).

Ideationally, a 'consequence: conclude' (*thus*) connexion is employed to link the previous research warrant stages to a sequence of two occurrence (*conduct*, *determine*) figures. In the first figure, the observer *we* is assigned agency in *conducting* the enacted activity entity *the PACT trial*, which signals the investigators' accountability and introduces the specific field of study. Then, a 'consequence: purpose' (*in order to*) connexion is used to state the purpose of *the PACT trial*, which introduces the objects of study:

- the measured enacted activity entity – *the efficacy of prazosin medication*; and
- the observed people – *patients with chronic combat-related PTSD who had frequent nightmares*.

Interpersonally, a concluding connexion indicates heteroglossic 'justification', which flags '+valuation' of *the PACT trial*. In addition, it is important to note that the use of the nominalisation *efficacy* does not express attitude since it does not represent a metaphorically realised quality *efficacious*. Instead, *efficacy* construes a measured entity dimension that was used to compare *prazosin* and *placebo* treatments. Put simply, while it names the criterion used for comparison, it does not assign the quality *efficacious* to *prazosin medication*.

In NEJM-2's Response, the facilitation activity series is followed by the *hypotheses*, which are based on the existing evidence. This phase is construed by a modalised co-elaborated state (*would have*) and two metaphorically realised modalised occurrence (*would improve*) figures, all containing the 'position' *hypothesize* with the 'observer' *we* as the source (see (3.77)).

(3.77) We hypothesized that

(a) veterans randomly assigned to prazosin would have less frequent and less intense **trauma-related nightmares…**

(b) (unpacked figure) **their sleep quality** and overall **clinical status** would **improve** more…

(c) (unpacked figure) at least one of the three **primary outcome measures** would **improve**…

As indicated in (3.77), the hypotheses utilise a variety of interpersonal resources. More precisely, both Graduating and Appraising tokens are used to target *PTSD outcomes*, saturating a positive prosody of the *prazosin medication*. To begin with, the 'amount' of *trauma-related nightmares* is down-scaled (*less frequent and less intense*), flagging '+happiness' of the observed people. Furthermore, the occurrence *improve* inscribes '+valuation' of *sleep quality*, *clinical status*, and *primary outcome measures*, which are augmented through comparative 'intensification' (*more*), broadened 'valeur: specificity' (*overall*), and an 'intensified amount' (*at least one of the three*). Lastly, all attitudinal assessments are 'entertained' by the

investigators, which is of great importance for the overall research genre. The 'entertainment' feature opens and 'expands' a dialogic space for negotiating the value of *prazosin in treating chronic combat-related PTSD*, which seals the warrant for the NEJM-2 trial. In addition, the use of the observer *we* as Appraiser foregrounds the investigators' investment in testing the treatment's efficacy.

The discourse semantic features observed in NEJM-2's Response were found across the narrowed dataset of agentive generic components functioning as the Response stages. They all inform on the steps and/or hypotheses made with a view to contributing to the relevant field of study. Linguistically, this is construed through temporal sequences of enacted occurrences and positioned state/occurrence figures. Occasionally, 'consequence: purpose' (*in order to*) connexions and figure positions can be realised through ideational metaphors, as shown in (3.78-79).

> (3.78a) ***The objective*** of this randomized clinical trial was to compare… (JAMA-1)
>
> (3.78b) (unpacked): We conducted this randomized clinical trial (***in order***) ***to*** compare…
>
> (3.79a) The hypothesis was that the decrease in the score… would be 50% or less… (NEJM-1)
>
> (3.79b) (unpacked): We hypothesized that the score would decrease by 50% or less…

Compared to Topic significance and Evidence, a lower frequency of ideational metaphors in Responses implies a slight shift in mode towards language as action, which reflects the agentive nature of the components realising them. In the case of steps, the non-metaphorical realisations allow the writer to give thematic prominence and agency to the observer entities. Arguably, this represents a linguistic means for expressing self-promotion and personal accountability. Similarly, the use of observers as position sources and Appraisers enables the writer to highlight active engagement in the medical discourse community. In other words, the onset of the Response stage indicates a change in the investigators' role within the knowledge building process from reflective to agentive.

3.5 Summary: an axial perspective on research warrants in clinical psychology RCT reports

Following the preliminary analysis of 15 sampled Introductions and the in-depth analysis of the narrowed dataset (n=8), this section summarises the identified generic structure of clinical psychology research warrants and the salient discourse semantic features. Adopting an axial perspective, it outlines the systemic options that RCT report writers have when providing justification for their trial and describes the structures that realise these options (cf. *axial relations* in Martin, 2013).

As a starting point, Figure 3.25 shows the realisation statements that formalise the preliminary findings on the generic structure of an RCT report's research warrant, which were discussed in Section 3.1.
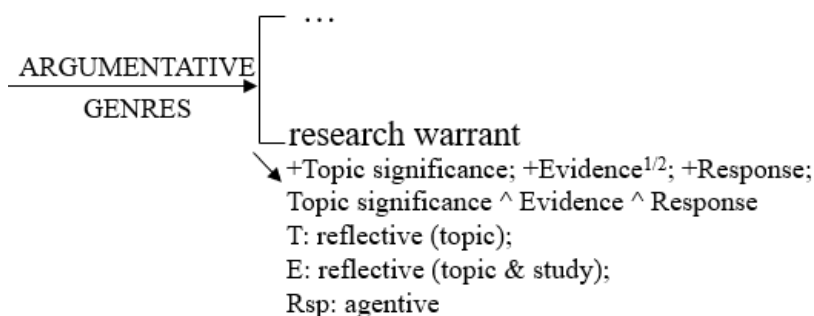
Figure 3.25: Realisation statements for structuring an RCT report research warrant: preliminary analysis.

As illustrated above, the preliminary analysis discovered that all clinical psychology RCT reports construe their Introduction stage by selecting the 'research warrant' feature from the ARGUMENTATIVE GENRE family (cf. *research warrant* in Hood, 2010; Humphrey & Hao, 2013). The downward arrow below the feature (↘) introduces the realisation statements with the rules for structuring a research warrant. It was found that research warrants must start with a Topic significance stage, which is followed by one or two Evidence stages and a Response (↘ +*Topic significance; + Evidence$^{1/2}$; +Response; Topic significance ^ Evidence ^ Response*).[42] To construe Topic significance, RCT report writers use a reflective (topic) generic component that builds and evaluates the object of study – *depression and/or anxiety outcomes* (↘ +*T: reflective (topic)*). Then, a reflective (topic & study) component is added to construe Evidence stages, which introduce *medical outcome research* as the general field of study while continuing to build the topic (↘ +*E: reflective (topic & study)*). The goal of Evidence is to provide rationale for extending a particular line of enquiry by identifying the strengths and/or weaknesses of the existing studies and treatment strategies. Finally, an agentive component is employed to realise Response, which introduces the writer's *trial* (i.e., action) as the next logical step towards improving depression and/or anxiety outcomes (↘ +*Rsp: agentive*).

The subsequent in-depth analysis, however, revealed an additional layer of genre embedding in all the Topic significance and Evidence stage realisations included in the narrowed dataset (see Sections 3.2-3 and Appendix 3). Supplanting the reflective (topic) component, embedded descriptive reports were found to construe Topic significance. Furthermore, embedded descriptive reports, factorial explanations, or argumentative genres were found to function as Evidence, supplanting the reflective (topic & study) component.

In the narrowed dataset, the embedded descriptive reports functioning as Topic significance always contain a Description stage that elaborates on the disorder under

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[42] To see the stage configurations of the research warrants included in the preliminary analysis, see Appendix 2.

investigation in terms of its *symptoms/effects*, *prevalence*, and/or *treatments*. In two cases (BMJ-1 and LANCET-2), this is preceded by a Classification stage that classifies the disorder under investigation and *defines* the diagnostic criteria. Thus, the embedded report adopts a static field perspective on the object of study. Linguistically, this is mainly realised through enhanced state figures that give thematic prominence to the characteristic entity *disorder* and correlate it with the observational activity/characteristic entities identified in the observed people (i.e., *behaviours/characteristics of those with the disorder*). Furthermore, the entities and correlations are used to form evaluative couplings with a range of Graduating and Appraising tokens. As a matter of fact, the discourse semantic analysis identified three distinct persuasive strategies for establishing topic significance:

- saturating a negative prosody of the disorder through graduation and causality;
- graduating the affected population; and
- saturating a negative prosody of a commonly sought treatment using the "slingshot" strategy.

As far as engaging the medical community is concerned, evaluative propositions tend to be phrased as 'reinforced assertions', which use footnote referencing to implicitly acknowledge the general field of study. Based on the analyses presented in Section 3.2, Table 3.10 summarises the most salient language resources employed to construe Topic significance stages.

Table 3.10: Language resources for building the object of study and demonstrating its importance in Topic significance.

	Topic significance [[descriptive report]]
Textual resources (establishing the topic and its importance)	PERIODICITY: - macroTheme of the research warrant genre; - Classification as macroTheme of the embedded descriptive report; - Thematic prominence given to the object of study, including characteristic entities (*disorders*), observed people (*those with a disorder*), and enacted activities (*interventions*)
Ideational resources (classifying and describing disorder outcomes)	IDEATION & CONNEXION: - general entity definition: a present tense co-elaborated state figure that defines the characteristic entity *disorder* (*Body dysmorphic disorder (BDD) is…*); - present tense enhanced state figures that establish causal correlations between *a disorder* and the observational activities/characteristic entities (*BDD is associated with functional impairment and suicidality*); - present tense occurrence figures that indicate change (*increase*) or common medical practice (*usually managed*)
Interpersonal resources (appraising disorder outcomes)	ENGAGEMENT: - 'reinforced assertions' to validate facts and assessments (*BDD is…[1]*); - 'entertaining', 'countering', and/or 'denying' the value of a treatment (*The treatment may benefit…/however, many patients do not respond…*) Positive ATTITUDE (incl. flagged by GRADUATION): Saturating a negative prosody of a disorder: - 'intensified -valuation' of the characteristic, observational activity, and semiotic result entities (*debilitating disorder, time-consuming compulsive behaviours, contributor to the global burden of disease*) Graduating the affected population: - '-capacity' of the observed people patients (*functional impairment*) - up-scaled 'amount' and 'extent: distribution/proximity: space' of *the affected population* (*10.8 million US residents*) Saturating an evaluative prosody of a treatment:

	- '+valuation' of a potential treatment strategy (*Patients may benefit…*) - '-valuation' of a commonly sought treatment using the "slingshot strategy" (*It is common to use treatment X; however, this treatment rarely works*);

Following Topic significance, Evidence aims to justify the reported trial by outlining an important research gap. In NEJM-2, this is achieved by embedding a descriptive report which identifies a promising field of study (Identification) before describing it in terms of its *participants*, *findings*, and *limitations* (Description). In LANCET-2, Evidence is construed by a factorial explanation that focuses on the underlying causes (Factors) of the disorder under investigation (Phenomenon). In the remaining six research warrants, RCT report writers employ argumentative genres that start with the official recommendations for disorder management (Position). To promote a treatment strategy one-sidedly, they can embed an exposition, which follows the Position with Argument stages (Evidence in JAMA-1; Evidence B in BMJ-1, JAMA-2, NEJM-1). For a more balanced promotion, they can use a discussion, which contains multiple Perspective stages (Evidence in BMJ-2; Evidence B in LANCET-1). Lastly, an embedded challenge with Counter-arguments can be employed to oppose the official guidelines (Evidence A in BMJ-1, JAMA-2, LANCET-1, NEJM-1).

Among the embedded genres functioning as Evidence, the factorial explanation adopts a dynamic field perspective, whereas the descriptive report and argumentative genres reflect a static field perspective. Despite the differences in generic staging, however, the analysis revealed that all Evidence realisations share a significant number of language features. Textually, the opening stages of the embedded genres (Phenomenon, Identification, Position) function as macroThemes, introducing the general field of study and establishing a dominating evaluative prosody. Ideationally, the analysis identified a frequent use of positioned figures, which gives thematic prominence to the field of study construed by enacted activities (e.g., *trial*), institutions (e.g., *National Institute*), or semiotic entities (e.g., *guidance, findings*). In addition to signalling a field shift, this carries important interpersonal implications. More precisely, figure positioning allows for a negotiation of different views through heteroglossia. Furthermore, it enables the writer to appraise the object (i.e., *depression/anxiety outcomes*) as well as the field of study, which is key in providing a strong justification for the new trial. Based on the analyses presented in Section 3.3, Table 3.11 summarises the most salient language resources employed to construe Evidence stages.

Table 3.11: Language resources for creating an important research gap in Evidence.

	Evidence [[embedded genre]]			[[descriptive report]]	[[factorial explanation]]
	[[argumentative genre]]				
	[[exposition]]	[[discussion]]	[[challenge]]		
Textual resources	PERIODICITY: - Position/Identification/Phenomenon as macroThemes; - Restatement of position/Counter-arguments/Extension as macroNews (linked via internal 'consq: conclude' connexion) **-** Thematic prominence given to the field of study, including enacted activities (*trials*), institutions (*Institutes*), and semiotic entities (*guidelines, findings, evidence*).				
Ideational resources (building a research gap)	IDEATION & CONNEXION: - positioned figure with institutions as source (*NICE advises…*); - evaluative occurrence figures with institutions as perpetrator entities (*approved by FDA*); - modalised figures with the enacted activity *intervention* (*Therapy could hasten…*); - co-elaborated state figures with semiotic proof entities (*therapy has the most evidence*). -positioned (predominantly) state figures with the enacted activity *trial* as source (*STAR*D trial showed X is efficacious…*) -extended state and occurrence figures used to appraise interventions and research (*X is beneficial; evidence is limited…; the study was not powered…*)			IDEATION& CONNEXION: - positioned figures with the enacted activity *trial* as source (*Six trials showed…*) - past co-elaborated state figures with the enacted activity and observed people entities (*Four trials involved U.S. military veterans*) - extended state figures with measured entity dimensions (e.g., *size*);	IDEATION & CONNEXION: Causal sequence (construing implication activity series): - present tense occurrence (e.g., *rise*) and enhanced state (e.g., *is associated with*) figures linked via 'consq/time: succ' (*to, by, after*) connexions - positioned figures with the enacted activity (*body of work*), semiotic (*findings*), and publications as sources;
Interpersonal resources (appraising the research gap)	ENGAGEMENT: - 'attributing' views to institutions (*X advises…*) - 'endorsement/acknowledgement' of other studies (*X has shown/reported*) - 'countering/denying' used for stopping and/or resuming evaluative prosodies (*However… not*)			ENGAGEMENT: - 'endorsement/acknowledgement' of other studies (*X has shown… it has been reported*) 'countering/denying' used for stopping and/or resuming evaluative prosodies (*Although/ however…not*)	
	ATTITUDE (incl. flagged via GRADUATION): '+valuation' of the enacted activity *treatment* (*recommended*, *effective*) '+/-valuation' of the enacted activity *research* (*showed… not powered*)	ATTITUDE (incl. flagged via GRADUATION): '+/-valuation' of the enacted activity *treatment* (*approved, effective, risk*) '+/-valuation' of the enacted activity *research* (*showed… not powered; limited, methodological drawbacks*)	ATTITUDE (incl. flagged via GRADUATION): '-valuation' of the enacted activity *treatment* (*expensive, risk, inaccessible, complex, long*) '-valuation' of the enacted activity *research* (*limited*)	ATTITUDE (incl. flagged via GRADUATION): '+valuation' of 'enacted activity' *treatment* (*effective, beneficial*) '+/-valuation' of the enacted activity *research* (*showed... but short, of moderate size, limited data*)	ATTITUDE (incl. flagged via GRADUATION): '+/-valuation' of enacted activity *treatment* (*produce stability, low solubility, rapidly metabolised*) '+/-valuation' of the enacted activity *research* (*collective body of research showed, cause not entirely understood*)

Lastly, the in-depth generic analysis of Responses in the narrowed dataset revealed no instances of a genre supplanting an agentive component (see Section 3.4). Then, a discourse semantic analysis of the realised agentive components, which construe a dynamic perspective on the specific field of study, identified several recurrent patterns of language meanings, as shown in Table 3.12.

Table 3.12: Language resources for introducing the reported trial in Response.

	Response: agentive component
Textual resources (filling an important research gap)	PERIODICITY: - macroNew of the research warrant genre (linked via an internal 'consq: conclusion' connexion); - thematic prominence given to the pronominal realisations (*we*) referring to the observer entity *investigators*, which foregrounds agency;
Ideational resources (presenting the trial and its object of study)	IDEATION & CONNEXION: Temporal sequence of enacted occurrences (steps; construing a facilitation activity series): - introducing the purpose of the study by linking past tense 'occurrence' figures via 'consq: purpose' (*in order to*) connexions Hypotheses: - 'positioned' figures with the 'observer' entity *investigators* as source
Interpersonal resources (appraising the trial and its object of study)	ENGAGEMENT: - 'justifying' the reported trial (*Thus; on the basis of; given that*); - 'entertaining' the positive trial outcomes (*We hypothesised…*) Positive ATTITUDE (incl. flagged by GRADUATION): - '+valuation' of the 'enacted activity' *RCT* (*justified, filling an important research gap*) - '+valuation' of *RCT outcomes* (*efficient, beneficial*)

In summary, the in-depth analysis of the narrowed dataset of research warrants discovered: (a) obligatory genre embedding for the construal of Topic significance and Evidence; and (b) variations in the realisations of Evidence stages. Consequently, there is a need to revise the preliminary realisation statements for structuring clinical psychology RCT report research warrants, as shown in Figure 3.26.
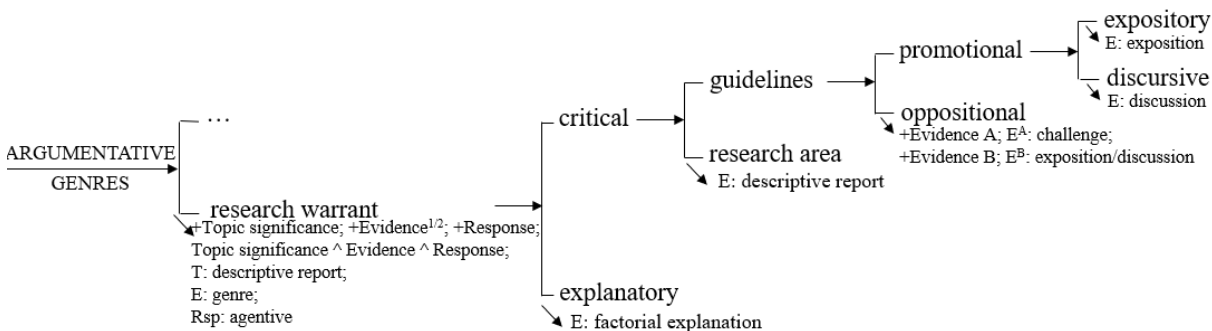
Figure 3.26: Realisation statements for structuring an RCT research warrant in clinical psychology.

As mentioned at the start of this section, writers need to select the 'research warrant' feature from the ARGUMENTATIVE GENRE family to construe an effective RCT Introduction. The research warrant genre has three obligatory stages occurring in a strict order (↘ *Topic significance ^ Evidence¹ᐟ² ^ Response*). In Figure 3.26, the revised realisation statements indicate the following rules:

- Topic significance must be realised by a descriptive report on the object of study (↘ *T: descriptive report*);

- Evidence must be realised by an embedded genre (↘ *E: genre*); and

- Response must be realised by an agentive generic component (↘ *Rsp: agentive*).

A more delicate system network of research warrants displays the options available for trial justification (see Fig. 3.26). In the field of clinical psychology, an RCT report writer can choose between creating an explanatory or critical research warrant. If the 'explanatory' feature is selected (12.5% of the sampled Introductions), then the Evidence stage is to be realised by an embedded factorial explanation, which reviews the existing research on the causes of the disorder under investigation (↘ *E: factorial explanation*). If the 'critical' feature is selected, then an additional choice needs to be made between the 'research area' and 'guidelines' features. On the one hand, a writer may opt to provide a critical overview of a promising 'research area' (12.5% of the sampled Introductions). In this case, Evidence is construed by an embedded descriptive report on the general field of study (↘ *E: descriptive report*). On the other hand, a writer may decide to offer a critical overview of the official treatment guidelines by promoting or opposing their recommendations. If the 'promoting' feature is selected (25% of the sampled Introductions), the writer can choose between an 'expository' or 'discursive' research warrant by embedding an exposition or discussion, respectively (↘ *E: exposition/E: discussion*). However, if the 'oppositional' feature is selected (50% of the sampled Introductions), then the writer employs a two-step process towards creating an important research gap. Specifically, they use an embedded challenge as Evidence A (↘ E^A*: challenge*), which is followed by Evidence B, realised by an embedded exposition or discussion that addresses the issues raised in the challenge (↘ E^B*: exposition/discussion*).

Chapter 4 Deconstructing Methods in clinical psychology RCT reports

This chapter presents the findings on the generic structure and discourse semantic features of RCT Methods. Section 4.1 shows the results of the preliminary analysis into the nature of the embedded methodology recount genre realising RCT report Methods across the entire dataset (n=15). Using the narrowed dataset (n=8), Section 4.2 showcases the in-depth discourse semantic analyses of the Study design stage, while Section 4.3 elaborates on the Record stages. Furthermore, Section 4.4 reviews the discourse semantic features of the stages that are oriented towards demonstrating ethics, scientific rigour, and credibility of the overall RCT methodology. Section 4.5 discusses the additional layers of genre embedding and the stages found in the narrowed dataset of methodology recounts. This is followed by Section 4.6, which proposes SFL-based criteria for analysing the comprehensiveness of a methodology recount and applies them to this study's dataset. Lastly, Section 4.7 summaries the findings of both preliminary and in-depth analyses by adopting an axial perspective on methodology recounts in clinical psychology.

4.1 The 'methodology recount' genre

According to the CONSORT Statement (Checklist items 3-12), RCT report Methods need to provide sufficient information to allow trial replication and critical appraisal of the methodology (Moher et al., 2010). In the preliminary analysis, all Methods were found to be realised by an embedded methodology recount genre (cf. methodology recount in Nesi & Gardner, 2012). Looking from "below" at the 'action↔reflection' mode variation, methodology recounts represent a continuation of the agentive component in research warrants. Specifically, methodology recounts are closer to the reflection pole as written academic texts, through less so than the research warrant reflective components. From the field perspective, they continue building the *RCT* as the specific field of study. When it comes to tenor, recounts are oriented towards demonstrating ethics, scientific rigour, and credibility of the adopted methodology.

To understand the nature of a methodology recount, this section starts with a highly abridged version of Methods in the JAMA-1 RCT report (see Table 4.1).

Table 4.1: The embedded methodology recount genre functioning as Methods in the JAMA-1 RCT report.

Staging	Text (JAMA-1)
METHOD [[methodology recount]]	Method
Study design	**Study Design** VAST-D study was a multisite randomized, single-blind, parallel-assignment trial including US Veterans Health Administration (VHA) patients whose condition was unresponsive to at least 1 course of antidepressant treatment.
Record 1: participant selection	**Patient Selection** We recruited VHA patients with an MDD diagnosis, who were referred by their VA clinicians. Diagnostic eligibility was further established by research staff using criteria from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR), supplemented with the 9-Item Patient Health Questionnaire.[16]
Record 2: randomisation& masking	**Randomization** Patients at 35 VA medical centers were randomized to 1 of 3 treatments: switch to another antidepressant, bupropion sustained release; augment current treatment with bupropion sustained release; or augment current treatment with an antipsychotic, aripiprazole. They were randomized using a stratified randomization scheme balanced (1:1:1) within each medical center using a random permuted-block scheme with variable block sizes (3 or 6) and random number generation in SAS Proc Plan (SAS Institute) prepared by VA Cooperative Studies Program Coordinating Center. After patient eligibility was confirmed, randomization was completed by site personnel using a web-based application. Outcomes were assessed by independent evaluators blind to treatment assignment.
Record 3: interventions	**Interventions** Treatments included titration (cross-titration for the switch group) from standard starting doses of 150 mg of bupropion sustained release to 300 mg or 400 mg daily; or from 2 mg of aripiprazole with titration to 5, 10, or 15 mg daily, until depressive symptoms remitted or adverse effects were intolerable.
Record 4: outcome measurement	**Outcome Measures** The primary outcome [measure] was remission (close to asymptomatic status), defined as a QIDS-C16 score (range, 0-27 with higher scores indicating more severe symptoms) of 5 or less at 2 consecutive scheduled follow-up visits during the acute treatment phase.
Record 5: statistical analysis	**Statistical Methods** To compare the proportion of patients achieving remission in each augmentation group relative to the proportion of patients achieving remission in the switch group, the intention-to-treat analysis for the co-primary hypotheses used logistic regression models stratified by participating medical center.

As shown in Table 4.1, methodology recounts typically begin with a generic component that functions as Study design. This stage foregrounds the text's reflective mode, with the main purpose of orienting the readership towards the field and tenor patterns construing the genre. More precisely, Study design is aimed at classifying and describing the specific field of study as the itemised activity *RCT* (e.g., *randomized, single-blind, parallel-assignment trial* in Table 4.1). In addition, this stage can be used to rally around the shared communal values attached to the act of performing RCTs since they represent the "gold standard" for evaluating interventions.

After the Study design stage, RCT report writers use sub-headings as a means for scaffolding the textual organisation of Methods, which is in line with the CONSORT recommendations (Moher et al., 2010). These sub-sections largely correspond to the activities involved in conducting an RCT trial, thus representing distinct generic components functioning as Record stages in the embedded methodology recount. It should be noted, however, that the sub-headings are not always a reliable criterion for identifying a Record stage. For instance, the *Procedures* section was found to contain either one stage (e.g., Record: randomisation&masking in JAMA-2; Record: interventions in LANCET-1) or several stages (e.g., Record: interventions and Record: outcome measurement in LANCET 5). At the field level, Record stages constitute a facilitation series of itemised activities momenting the trial – *participant selection, randomisation and masking, interventions, outcome measurement, and statistical analysis*. Within each stage, individual itemised activities are further momented, providing details on the corresponding stages within the RCT workflow. For instance, JAMA-1's Record: randomisation&masking (see Table 4.1) is used to moment the activities of *randomisation and masking*, as shown in (4.1-2).

> (4.1) a random permuted-block scheme…. **prepared** by VA Cooperative Studies Program Coordinating Center
> ^
> **used** the random permuted-block scheme… in SAS Proc Plan (SAS Institute)
> ^
> **balanced** a stratified randomization scheme (1:1:1) within each medical center
> ^
> **used** the balanced (1:1:1) stratified randomization scheme
> ^
> patients **were randomized**

> (4.2) patient eligibility **was confirmed**
> ^
> **used** a web-based application
> ^
> **completed** randomization by site personnel
> ^
> outcomes **were assessed** by independent evaluators blind to treatment assignment

As shown in (4.1-2), facilitation activity series also specify the items involved – the instruments (e.g., *a random permuted block scheme, a web application*) and the personnel (e.g., *VA Cooperative Studies Program Coordinating Center, site personnel, independent evaluators blind to treatment assignment*).

Record stages are primarily concerned with momenting the study, which implies their interest in the epistemology of knowledge building and a dynamic field perspective (i.e., RCT as a series of activities). As *RCT* represents an itemised momented activity, methodology recounts can also contain components oriented towards positioning the reader to assign positive attitudinal properties – ethics, rigour, and credibility – to the conducted RCT or RCT reporting.

These attitudinal components function as stages that focus on the axiology of knowledge building, foregrounding tenor and observing the field of study from a static perspective (i.e., RCT as a study type). The preliminary analysis revealed two stages that are realised by attitudinal components: Compliance and External involvement.

To illustrate a Compliance stage, it is now useful to retrieve the text preceding Study design in the methodology recount functioning as JAMA-1's Methods (see Table 4.2).

Table 4.2: The Compliance stage in the embedded methodology recount genre functioning as Methods in JAMA-1's RCT report.

Staging	Text (JAMA-1)
Compliance	The Veterans Affairs (VA) Office of Research and Development and VA Central Institutional Review Board approved the study, the National Institutes of Health provided a certificate of confidentiality, the VA Central Institutional Review Board conducted annual continuing review, and a data and safety monitoring committee reviewed the study biannually. All patients provided written informed consent and privacy authorization. The full study protocol can be found in Supplement 1.

As shown in Table 4.2, the Compliance stage lists the study-related documents and/or assurances provided by the relevant authorities, participants, and/or investigators. The purpose of this stage is to highlight that the conducted RCT has met the gold standard for evaluating interventions. For instance, JAMA-1's Compliance aims to demonstrate that JAMA-1's methodology is:

- scientifically sound (*approved* by *the VA Office of Research and Development*),
- confidential (*a certificate of confidentiality provided by the National Institutes of Health*),
- adherent to the approved protocol (*continuing review by the VA Central Board*),
- safe (*reviewed* by *a data and safety monitoring committee*),
- ethical (*written informed consent, privacy authorisation* provided by *all patients*), and
- transparent (*the full study protocol in Supplement 1*).

Table 4.3 shows another attitudinal component, which functions as External involvement in the methodology recount functioning as LANCET-4's Methods.

Table 4.3: The External involvement stage in the embedded methodology recount genre functioning as LANCET-4's Methods.

Staging	Text (LANCET-4)
External involvement *comments*	**Role of the funding source** The funder of the study (Canadian Institutes of Health Research) and the device manufacturer (MagVenture) that provided equipment had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The corresponding author (DMB) and statistician (KET) had full access to all the data and the corresponding author (DMB) had final responsibility for the decision to submit for publication.

In Table 4.3, the writer specifies the degree to which an external party (*the funder of the study*) was involved at different RCT stages (*study design, data collection, data analysis, data*

interpretation, or writing of the report). This involvement is described with reference to: (a) the role of the external party (*no role*); and (b) investigators' independence (*full access to all the data, final responsibility for the decision to submit for publication*). Across the dataset, External involvement was found to be concerned with the input provided by the funding sources and/or participants. Like Compliance, this stage is used to deal with the issues of ethics and credibility.

Having illustrated the methodology recount stages identified in the preliminary analysis, it is now possible to introduce a typology of the generic components that realise them (see Fig. 4.1).
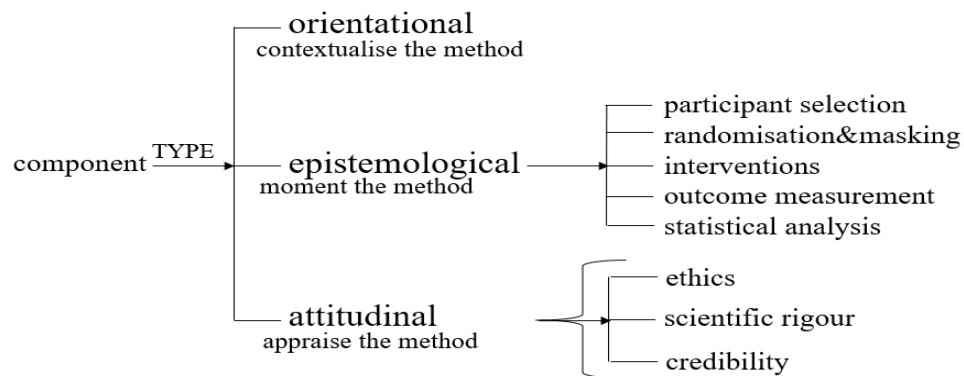
Figure 4.1: Generic component types realising stages in methodology recounts functioning as RCT reports' Method stage.

As shown in Figure 4.1, a broad distinction can be made between **orientational**, **epistemological**, and **attitudinal** generic components. Looking from "below" at the register level, these component types differ in the registerial variable that is being foregrounded. Specifically, orientational components foreground the mode, while epistemological and attitudinal components primarily deal with the field and the tenor, respectively. At the discourse semantic level, this means that different stages are likely put different strands of meaning at risk. First, the orientational Study design aims to establish what kind of a trial design was adopted, which makes it primarily textual in nature. Second, epistemological Records are interested in momenting the RCT into facilitation activity series, whose construal relies on ideational language resources. While foregrounding ideational meanings, each Record stage elaborates on individual activities performed as a part of the RCT, which creates the basis for more delicate epistemological components: **participant selection**, **randomisation&masking**, **interventions**, **outcome measurement**, and **statistical analysis** (see Fig. 4.1). Third, the attitudinal components use a wide range of interpersonal resources to deal with the axiological dimensions pertinent to conducting an RCT – **ethics**, **scientific rigour**, and/or **credibility**. They can focus on one or more of these dimensions (i.e., ethics & scientific rigour & credibility in Compliance; ethics & credibility in External involvement). Lastly, it must be emphasised that prioritising one registerial variable/metafunction within a stage does not mean that the other

two variables/metafunctions are not relevant. For instance, Record stages often include evaluation targeted at the investigators and instruments (for more details, see Section 4.3).

As a summary, Figure 4.2 uses a tree diagram to represent the structural realisation of the embedded JAMA-1 methodology recount discussed in this section.
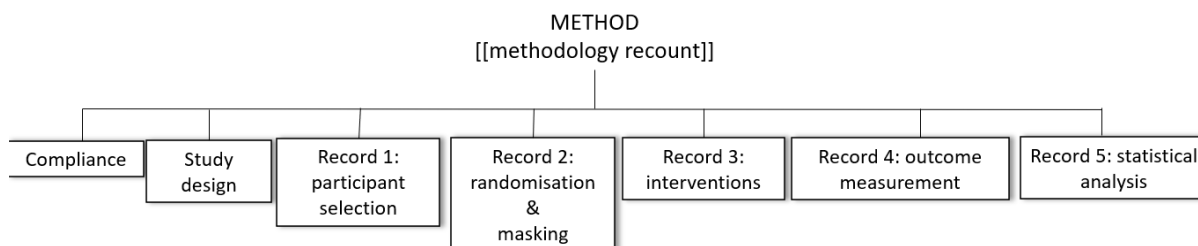
Figure 4.2: A tree diagram of the generic structure of JAMA-1 Method stage: the first order embedding.

The following sections elaborate on individual methodology recount stages with reference to their internal structures and salient discourse semantic features.

4.2 The Study design stage

To describe a trial design, the CONSORT Statement (Checklist Item 3) requires that RCT report writers include "information on the type of the trial" and "all aspects of how a trial is set up" (Moher et al., 2010, p. 5). Thus, the orientational Study design stage is concerned with classifying, summarising, and evaluating the design of the reported study. At the discourse semantic level, this stage is realised as macroTheme of the methodology recount. Furthermore, the in-depth analysis of the narrowed dataset revealed several differences in the realisational patterns with reference to the density of experiential content and the explicitness of evaluation.

4.2.1 Defining the study design

Ideationally, Study design can be realised through a single past tense co-elaborated state figure that provides a linguistic *definition* of the *study* as an enacted activity entity. In this case, the experiential content is highly condensed and the evaluative meanings highly implicit. In the dataset, such realisations were identified in BMJ-2's and JAMA-1's methodology recounts and this section uses JAMA-1's Study design as an illustration (see Table 4.4).

Table 4.4: The Study design stage in the methodology recount of JAMA-1.

Staging	Text (JAMA-1)
Study design	**Study Design**
definition (method)	VA [Veterans Administration] Augmentation and Switching Treatments for Improving Depression Outcomes (VAST-D) was a multisite randomized, single-blind, parallel-assignment trial including US Veterans Health Administration (VHA) patients whose condition was unresponsive to at least 1 course of antidepressant treatment.

As shown in Table 4.4, the name of JAMA-1's study – *VAST-D* – contains the enacted activity entity *treatments*, which is enhanced in terms of purpose by the embedded non-finite clause *for improving depression outcomes*. The characterisation of *treatments* subsumes the meanings of the institution *VA* and the enacted activity entities *augmentation and switching,* which provides the essential details on the performed interventions. [43] Simultaneously, the characterisation of the semiotic *outcomes* subsumes the meaning of the characteristic entity *depression*, which is the object of outcome measurement.

Next, *VAST-D* is co-elaborated with the enacted activity entity *a multisite randomized, single-blind, parallel-assignment trial.* (see (4.3)).

(4.3) VAST-D ⟨was⟩ a multisite randomized, single-blind, parallel-assignment **trial**

In (4.3), the characteristic *multisite* amplifies the *trial*'s 'extent: distribution: space', while *randomized, single-blind,* and *parallel-assignment* narrow its 'valeur: specificity'. Ideationally, this introduces the randomisation and blinding activities, classifying the *VAST-D study* as an *RCT* (*VAST-D* → type → *RCT*). From an interpersonal point of view, this flags a dominating positive prosody of the *study design*, RCTs being the gold standard in medical outcome research.

As indicated in (4.4), the *RCT* is further elaborated through an embedded clause, which construes a compositional taxonomy between the *RCT* and the observed people entity *US VHA patients* (*RCT* ← part ← *US VHA patients*).

(4.4) trial [[including US Veterans Health Administration (VHA) patients]]

The characterisation of the *patients* as *US* and *VHA* specifies the location and extent of the participant selection process. Moreover, the *patients* are elaborated by yet another embedded clause (see (4.5)), which construes a compositional taxonomy between the observed people and the characteristic entity *condition* (*US VHA patients* ← part ← *unresponsive condition*).

(4.5) patients [[whose condition was unresponsive to at least 1 course of antidepressant treatment]]

As marked in (4.5), the embedded clause itself specifies a key eligibility criterion (*unresponsive to at least 1 course of antidepressant treatment*)**.**

The discourse semantic analysis of JAMA-1's Study design stage shows that the reconstrual of occurrences as enacted activity entities enables the RCT writer to classify, summarise, and evaluate the study design by *defining* it. A static perspective on the RCT field means that the study design can be classified as an *RCT,* affording '+valuation' of the study. Simultaneously, a dynamic reading of the definition is made possible because the *study* is

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[43] "The Veterans Health Administration is America's largest integrated health care system, providing care at 1,255 health care facilities, including 170 medical centers and 1,074 outpatient sites of care of varying complexity (VHA outpatient clinics), serving 9 million enrolled Veterans each year" (https://www.va.gov/health/).

characterised, elaborated, and/or enhanced using reconstrued enacted activities (e.g., *augmentation*), institutions (e.g., *VHA*), observed people (e.g., *patients*), places, (e.g., *US*) and characteristic (e.g., *depression*) entities (see Table 4.5).

Table 4.5: A dynamic reading of the Study design stage in the methodology recount in JAMA-1.

Record stage	Relevant information
Record: participant selection ^	*including US Veterans Health Administration (VHA) patients whose condition was unresponsive to at least 1 course of antidepressant treatment*
Record: randomisation&masking ^	*multisite randomized, single-blind, parallel-assignment trial*
Record: interventions ^	*Augmentation and Switching Treatments for Improving Depression Outcomes*
Record: outcome measurement	*Depression Outcomes*

As indicated in Table 4.5, a dynamic reading of the definition summarises the study by providing brief information on the subsequent Record stages, which unfold in time.

4.2.2 Momenting the study design

A Study design stage can also include a temporal sequence of past tense enacted occurrence figures (i.e., *steps*). These stage realisations foreground a dynamic perspective on the field of study, with the sequences used to construe a momented facilitated activity. Compared to the highly synoptic stage realisation in the previous section, the experiential content in the stages that involve sequencing is less condensed and evaluative meanings tend to be more explicit. In the narrowed dataset, BMJ-1's and LANCET-2's methodology recounts were found to contain such Study design stages. As an illustration, this section analyses the discourse semantic features in BMJ-1 (see Table 4.6).

Table 4.6: The Study design stage in the methodology recount of BMJ-1.

Staging	Text (BMJ-1)
Study design *definition (method)* *steps* *comment 1* *steps (contd.)* *comment 2* *comment 3*	**Trial design** This [study] was a single blind parallel group superiority trial conducted at Karolinska Institutet from November 2013 to January 2015. Participants were randomly assigned to 12 weeks of BDD-NET (n=47) or online supportive therapy (n=47) in a 1:1 ratio without restriction. Both groups were followed for three months after the end of treatment (six months from baseline). This follow-up point was not included in the trial registration (clinicaltrials.gov) because of an administrative error but was included in the original study protocol. Participants randomised to supportive therapy were offered BDD-NET after the six month follow-up assessments. No changes to methods were made after the trial started. The study is reported in accordance to the Consolidated Standards for Reporting Trials (CONSORT) statement for non-pharmacological treatments.[26]

Like JAMA-1, Table 4.6 shows that BMJ-1's Study design starts with a co-elaborated state figure that *defines* the *trial design*, classifying the *study* as the enacted activity entity *a single blind parallel group superiority trial* (*This [study]* → type → *RCT*). Furthermore, the *trial* is elaborated by an embedded clause that specifies the institution entity *Karolinska Institutet* as well as the time entities *November 2013* and *January 2015*, quantifying the trial's 'extent: distribution: space/time'. Unlike the JAMA-1 stage in the previous section, however, the study *definition* constitutes a hyperTheme rather than an entire stage (see Fig. 4.3).
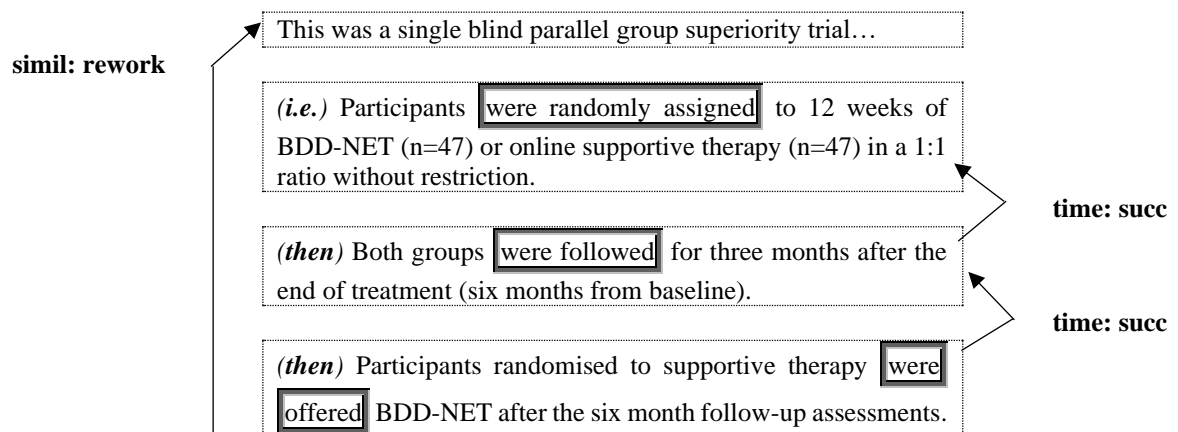
Figure 4.3: The temporal sequence of enacted occurrences in the Study design stage in BMJ-1's methodology recount.

As shown in Figure 4.3, the *definition* of BMJ-1's *study* is unpacked through a temporal sequence of three enacted occurrences (i.e., *steps*) in past tense: *randomly assigned ^ followed ^ offered*. To add specificity, the sequenced figures introduce the observed people (e.g., *participants*), measured instrumental things/enacted activity entities (e.g., *12 weeks of BDD-NET/online supportive therapy*) and time (e.g., *for three months*). On the other hand, the observers are left implicit (e.g., *were followed (by <u>us</u>)*).

In addition to the study *steps*, BMJ-1 Study design contains three *comments* that address the issue of protocol adherence (see Table 4.6). By including these *comments*, the writer acknowledges the potential concerns of the medical scientific community and chooses to engage with them. In these instances, there are interpersonal meanings at stake, which is reflected in the writer's use of evaluative language.

In the first *comment* (see (4.6)), there is a mention of *an administrative error*, which inscribes '-capacity' of an implicitly realised *administrative* observer.

> (4.6) This follow-up point was not included in the trial registration (clinicaltrials.gov) because of an **administrative error** but was included in the original study protocol.

Nevertheless, (4.6) shows that this is immediately 'countered' by the fact that the *error* was corrected, converting the previous evaluation into a flagged '+capacity' of the same observer entity.

In the second *comment* (see (4.7)), negation is used to 'deny' any deviation from the established study protocol (*no changes were made*), which can be interpreted as flagged '+valuation' of the enacted activity entity *methods*.

(4.7) No **changes** to **methods** were made after the trial started.

Lastly, *the CONSORT statement*, which is the key document on quality RCT reporting, is used to invoke '+valuation' of the semiotic locution *RCT report* (see (4.8)).

(4.8) The study is reported in accordance to **the Consolidated Standards for Reporting Trials (CONSORT) statement** for non-pharmacological treatments.[26]

As BMJ-1 reports on the effectiveness of psychological treatments, (4.8) further flags a positive attitudinal reading of the *RCT report* by using the enacted activity entity *non-pharmacological treatment* to sharpen the 'valeur: specificity' of *the CONSORT statement*.

It can be concluded that a Study design realisation with the facilitation activity series provides more information on individual stages of the study, especially with reference to time. Furthermore, interpersonal meanings seem to be more prominent than in a Study design that only defines the study. However, the evaluation is still relatively implicit in comparison to the stage realisations discussed in the following section.

4.2.3 Appraising the study design

In the Study design stages of NEJM-1's/2's methodology recounts, trial *definitions* and *steps* are accompanied by *comments* that contain a higher degree of evaluative explicitness. At the discourse semantic level, this is realised through combinations of inscribed and invoked '+valuation', which saturate a positive prosody of the study design and/or report. To illustrate, this section explores the features of NEJM-2's Study design (see Table 4.7).

Table 4.7: The Study design stage in the methodology recount of NEJM-2.

Staging	Text (NEJM-2)
Study design	**Trial Design**
definition (method)	The PACT [Prazosin and Combat Trauma PTSD] trial was a 26-week, multicenter, double-blind, randomized, controlled trial that was conducted at
steps	13 Veterans Affairs (VA) medical centers. Primary outcomes were determined at 10 weeks. After the primary outcomes were assessed, prazosin or placebo [treatment] was continued in a double-blind fashion for an additional 16 weeks, but other treatments could be added if judged necessary by the patients' clinicians, who were unaware of the trial-group assignments.
comments	This trial was approved by the human rights committee at the Palo Alto Cooperative Studies Program Coordinating Center, by the VA central institutional review board, and by the local VA research and development committees at the participating sites. Before enrollment, all participants provided written informed consent. The responsibilities of the authors and the sponsor are detailed in the Supplementary Appendix, available with the full text of this article at NEJM.org. The authors vouch for the accuracy and completeness of the data and analyses and the fidelity of the trial to the

	protocol, available at NEJM.org. There was no industry support of or involvement in the trial.

As shown in Table 4.7, the writer starts by *defining* the *trial* through a co-elaborated state figure. The *PACT trial* name subsumes the meanings of the instrumental thing *prazosin* and the characteristic entity *combat trauma PTSD*. Furthermore, the co-elaboration sets up a classification taxonomy between the *PACT trial* and the characterised enacted activity entity *a 26-week, multicenter, double-blind, randomized, controlled trial* ($PACT \rightarrow$ type $\rightarrow RCT$).

As illustrated in Figure 4.4, the *PACT trial definition* is further unpacked through a temporal sequence that construes the following facilitation activity series: *determined (primary outcomes) ^ assessed (primary outcomes) ^ continued (prazosin or placebo treatment) = judged (the treatment) ^ added (other treatments)*.
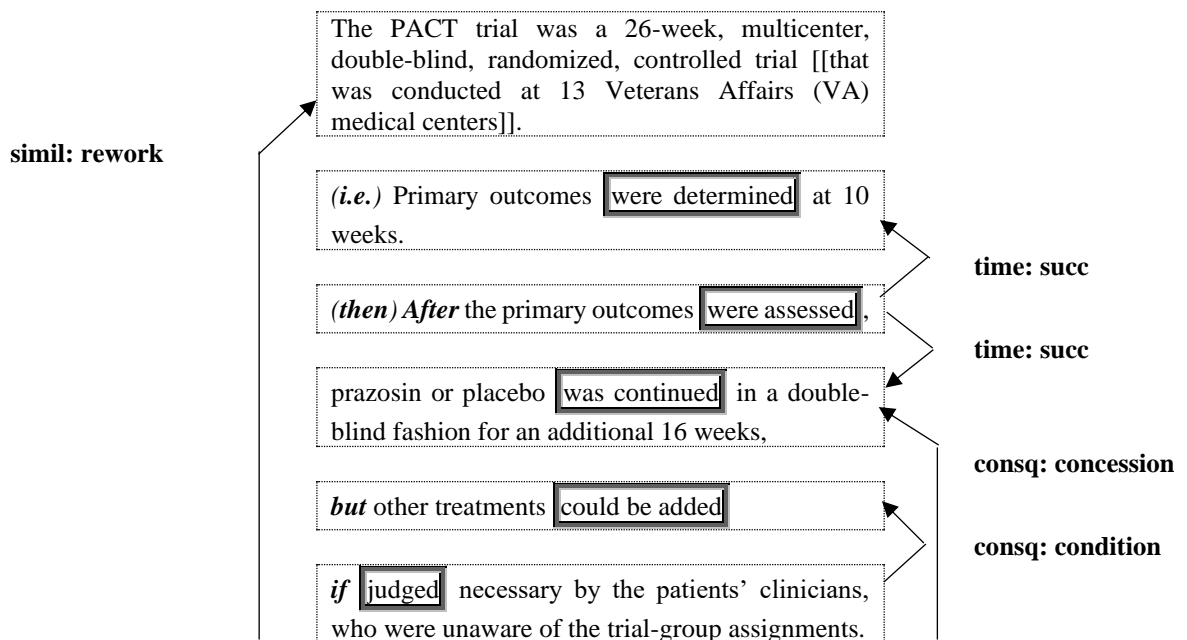
Figure 4.4: The temporal sequence of enacted occurrences in the Study design stage in NEJM-2's methodology recount.

Like in BMJ-1's Study design, the NEJM-2 *steps* are accompanied by *comment* phases, which use a range of interpersonal resources to convince the medical scientific community of the *trial*'s value.

In the first *comment* (see (4.9)), the occurrence *approved* inscribes '+valuation' of the enacted activity entity *trial*.

> (4.9) **This trial** was **approved** by the human rights committee at the Palo Alto Cooperative Studies Program Coordinating **Center**, by the VA central **institutional review board**, and by the local **VA research and development committees** at the participating sites.

In (4.9), the occurrence *approve* also provides an implicit 'attribution' of the trial's '+valuation' to the perpetrating institution entities – *human rights committee*, *institutional review board,* and *VA research and development committees*. Arguably, this foregrounds the objectivity of the attitudinal assessment. To further intensify the validity of the evaluation, the writer flags the

importance and relevance of the institutions by quantifying their 'extent: distribution: space' – *Palo Alto Cooperative Studies Program Coordinating* Center, *VA central* institution, and *local VA… at the participating sites*.

Furthermore, the second *comment* (see (4.10)) uses a maximised 'amount' (*all*) of the observed people *who provided informed consent* to flag '+propriety' of *the investigators*.

(4.10) Before enrollment, <u>all</u> **participants** provided written informed consent.

In the third *comment* (see (4.11)), *RCT report* transparency is established by evaluating the semiotic locution *Supplementary Appendix*.

(4.11) The responsibilities of the authors and the sponsor are **<u>detailed</u>** in the **Supplementary Appendix**, **available** with the <u>full</u> **text** of this article at NEJM.org.

As indicated in (4.11), '+valuation' of the *Supplementary Appendix* is inscribed using the characteristic *available* and an inherently intensified occurrence *detailed.* To saturate a positive evaluative prosody of the overall *RCT report*, (4.11) also uses a maximised 'amount' (*full*) of *the available text*.

To advance '+valuation' of *the trial*, the fourth *comment* (see (4.12)) employs heteroglossic 'pronouncement' *vouch* and the attitudinal qualities *accuracy, completeness, and fidelity*.

(4.12) The authors **vouch** for the **accuracy** and **completeness** of the **data** and **analyses** and the **fidelity** of the **trial** to the protocol, available at NEJM.org.

Finally, the fifth *comment* (see (4.13)) uses negation to 'deny' the enacted activity entities *industry support or involvement*, flagging '+propriety' of the investigators and '+valuation' of the trial.

(4.13) There was no **industry support** of or **involvement** in the trial.

In conclusion, the language of evaluation analysed in this section is much more prominent and explicit than the interpersonal resources discussed in the previous two sections. Specifically, NEJM-2's writer employs more Appraising tokens that inscribe attitude and addresses a larger number of concerns.

4.3 The Record stages

As discussed in Section 4.1, the preliminary analysis of the dataset revealed that methodology recounts functioning as RCT report Methods contain five Record stages that follow the orientational Study design stage. At the field level, these Record stages represent a series of itemised activities momenting the facilitation of an *RCT – participant selection* (Section 4.3.1), *randomisation&masking* (Section 4.3.2), *interventions* (Section 4.3.3), *outcome measurement* (Section 4.3.4), and *statistical analysis* (Section 4.3.5). Within each Record stage, the title

itemised activity (e.g., *interventions* in Record: interventions) is further momented by a facilitated activity series. In other words, these stages are realised by epistemological generic components, with primarily ideational meanings at stake. The discourse semantic analysis identified a predominant use of enacted occurrence figures in past tense, reconstrued activity entities, and external connexions (i.e., *steps* phases). This is in line with the preliminary findings indicating a dynamic field perspective in Record stages. Be that as it may, the fine-grained analysis also found internal CONNEXION and APPRAISAL resources to be valuable tools for establishing the positive evaluation of the facilitating entities and the facilitated methodological steps.

4.3.1 The Record: participant selection stage

According to the CONSORT Statement (Checklist Item 4), RCT reports need to elaborate on the recruitment steps, locations, settings, and criteria so that the readership can "judge the applicability and generalisability of a trial" (Moher et al., 2010, p. 6). Therefore, the field of the Record: participant selection stage can be defined as a momented facilitated activity of *selecting the trial participants*. To construe this field, it was found that the RCT report writers tend to use one or more of the following linguistic strategies:

(i) forming temporal sequences of the enacted occurrences in past tense (i.e., *steps*);

(ii) establishing 'consequence: condition' connexions between: (a) the enacted occurrences *exclude* or *include*; and b) the observational occurrences and/or state figures;

(iii) providing study-specific *definitions* of the observed people entity *participant* or the semiotic entity *selection criteria.*

4.3.1.1 Introducing the selection steps

RCT reports can expand on how the recruitment activity was facilitated by providing a record of the recruitment *steps*, including the people involved and the tools used. To do that, the writer employs temporal sequencing that construes a series of facilitated activities momenting the activity of *selecting trial participants*. At the discourse semantic level, this is reflected in the use of 'time: successive' and 'consequence: purpose / means' connexions, which link the enacted occurrence figures in past tense (cf. facilitated activities in Hao, 2020a). The orbital configurations of the sequenced figures include observers as facilitators and instrumental things/enacted activities as facilitatory entities.

A representative example of the recruitment steps can be found in the Record: participant selection stage of BMJ-1's methodology recount (see Fig. 4.5).

Flyers were distributed to psychiatrists and general practitioners throughout Sweden with information about the study.

In addition, the study was advertised in national **newspapers**.

(*then*) **Interested** applicants had to register on the study's **secure** website

and complete an online screening consisting of the Montgomery-Åsberg depression rating scale self report (MADRS-S),[28] alcohol use disorders identification test,[29] drug user disorders identification test,[30] body dysmorphic disorder questionnaire,[31] and general background information.

(*because*) **The body dysmorphic disorder questionnaire** is **a screening instrument** that has shown **excellent sensitivity** and **specificity**.[31]

(*then*) Potentially suitable participants underwent a structured diagnostic interview with a clinical psychologist or with a **trained student** in the final **semester** of a five year clinical psychology **programme**.

(*more precisely*) **The interviews** were conducted **over telephone**, which is a **reliable administration format** for structured psychiatric assessments.[32]

(*i.e.*) (*In order*) *To* establish a diagnosis of body dysmorphic disorder,

we used **the structured clinical interview** for **DSM**-IV [**Diagnostic and Statistical Manual**, 4th ed.] for axis I disorders, with an added question about the presence of repetitive behaviours

(*in order*) *to* reflect the updates made to **the diagnostic criteria** of body dysmorphic disorder in **DSM**-5 [**Diagnostic and Statistical Manual**, 5th ed].

(*then*) The mini-international neuropsychiatric **interview** was used

(*in order*) *to* determine the presence of other comorbid psychiatric disorders.[33]

add

time: succ

add

consq: justify

time: succ

simil: rework

simil: rework

consq: purpose

consq: purpose

time: succ

consq: purpose

Figure 4.5: CONNEXION and APPRAISAL analyses of the steps in BMJ-1's Record: participant selection.

As illustrated in Figure 4.5, BMJ-1's writer uses 'time: successive' (*then*) and 'consequence: purpose' (*in order to*) connexions to sequence the recruitment *steps*. Furthermore, internal similarity: rework (*i.e.*) connexions are used to disclose additional details, while 'consequence: justify' (*because*) provides step justification. The facilitation strategy (i.e., the *steps* phase) carries two affordances:

- the enacted occurrences can be instrumented (e.g., *over telephone*), situated (e.g., *in national papers*), or distributed (e.g., *throughout Sweden*);
- the steps can be justified and the facilitator/facilitatory entities evaluated.

While the former affordance helps define the generalisability of the RCT, the latter enables the RCT report writer to weave interpersonal meanings into a predominantly experiential stage. The need to demonstrate the trial's ethics, scientific rigour, and credibility makes this option rather valuable, which can be seen in the APPRAISAL analysis in Figure 4.5.

To begin with, the quality *interested* inscribes '+desire' of the observed people *applicants*, which underscores the participants' consent and willingness to participate. Furthermore, the observers are targeted with '+capacity' to raise the credibility of human judgement throughout the recruitment. For instance, the quality *trained* inscribes '+capacity' of the observer *student* (see (4.14)).

> (4.14) Potentially suitable participants underwent a structured diagnostic interview with a clinical psychologist or with a **trained** **student** in the final **semester** of a five year ['extent: distribution: time'] clinical psychology ['valeur: specificity'] **programme**.

As indicated in (4.14), this prosody is intensified by graduating the *student's training* in terms of 'extent: distribution: time' and 'valeur: specificity'. Similarly, medical professions *psychiatrists* and *a clinical psychologist* should afford '+capacity' of the observers as they assume the possession of the appropriate qualifications.

In addition, the instrumental things are inscribed '+valuation' to rally around the values that are shared within the medical discourse community. To indicate an ethical handling of the *applicants*' data, the attitudinal quality *secure* is related to the *study's website*. To highlight the reliability of the eligibility assessments, the *screening instruments* and *administration formats* are described as *showing excellent sensitivity and specificity* and *being reliable*. In these state figures, the use of present tense (e.g., *is*) indicates a general and consistent '+valuation' of the *BDD questionnaire* and *telephone interviews*. Moreover, publication entities are introduced through footnote referencing, which presents the instrumental things as established within the community (e.g., *BDD questionnaire*[31] in (4.15)).

> (4.15) The body dysmorphic disorder [BDD] questionnaire[31] is …

Concurrently, GRADUATION and/or ENGAGEMENT are used to saturate the positive prosodies of the facilitatory entities. For instance, the *interviews* in (4.16-17) represent the most appropriate assessment tools due to their sharpened 'valeur: specificity' (*for axis I disorders…* in (4.16); *neuropsychiatric* in (4.17)), increased 'extent: proximity: time' (*4th/5th ed.* – in (4.16)) and/or broad 'extent: distribution: space' (*international* in (4.17)).

(4.16) …we used **the structured clinical interview** for **DSM-IV [Diagnostic and Statistical Manual**, 4th ed.] for axis I disorders, with an added question about the presence of repetitive behaviours

(4.17) …The mini-international neuropsychiatric **interview** was used…

Likewise, the 'endorsement' in (4.18) extra-vocalises the intensified '+valuation' of the instrumental thing *BDD questionnaire*, which suggests a higher degree of objectivity.

(4.18) *(because)* **The body dysmorphic disorder (BDD) questionnaire** is a screening instrument that has shown **excellent sensitivity** and **specificity**.

As indicated in (4.18), the extra-vocalised proposition ultimately offers a heteroglossic 'justification' for the investigator's choice of the facilitatory entity.

4.3.1.2 Introducing the selection principles

Unlike the facilitation strategy, which focuses on momenting *participant selection* in terms of expectancy, the second strategy is concerned with momenting *participant selection* in terms of implication (cf. Doran & Martin, 2021). Specifically, the first strategy (i.e., the *steps* phase) relies on temporal sequences that construe facilitated activity series, whereas the second strategy (i.e., the *principles* phase) uses causal sequences that construe regulated activity series.

An illustration of the *principles* phase can be found in the Record: participant selection stage of NEJM-2's methodology recount (see Fig. 4.6).
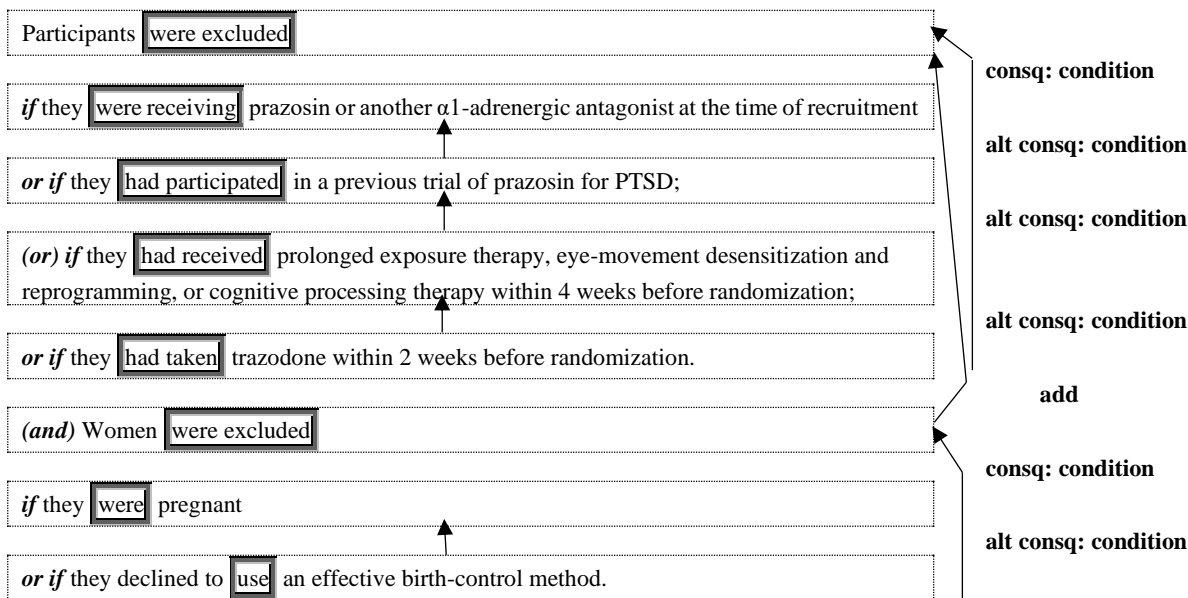
Figure 4.6: CONNEXION *analysis of the causal sequence in NEJM-2's Record: participant selection.*

As shown in Figure 4.6, causal sequencing establishes a number of 'consequence: condition' (*if*) connexions between the enacted occurrence *exclude* and the observational occurrence (e.g., *were receiving*) or state (e.g., *were pregnant*) figures. Furthermore, the observed people (*participants*, *women*) are given thematic prominence, while the observers are left implicit

(*were excluded (by us)*). It is important to mention, however, that the observed entities play different roles within temporal and causal sequences (see (4.19-20)).

> (4.19) Interested applicants had to complete an online screening. (BMJ-1)

> (4.20) Participants were excluded if they were receiving prazosin at the time of recruitment. (NEJM-2)

For instance, the occurrence in (4.19) foregrounds the facilitation of BMJ-1 selection, while the occurrence in (4.20) foregrounds the principle underlying NEJM-2 selection. In addition, the *applicants* in (4.19) interact with the recruitment-related instrumental thing *an online screening*, while the *participants* in (4.20) interact with the treatment-related instrumental thing *prazosin*. In other words, the focus of the *principles* phase is on the criteria rather than facilitation. This in turn enables the writer to specify the circumstances surrounding the patient-related information. To do so, they tend to situate the observational occurrences using time and enacted activity entities (e.g., *at the time of recruitment, within 2 weeks before randomization*).

Based on the dataset, the key affordance of momenting the participant selection through causal sequences seems to be the opportunity to focus on the participant's treatments and health-related occurrences/characteristics. These details paint a broader picture of the participants, which is crucial for assessing the external validity (i.e., generalisability and applicability) of the trial.

4.3.1.3 Defining the study participant and selection criteria

The third strategy stems from the fact that the activity field of *selecting trial participants* can be itemised and realised through the reconstrued enacted activity entity *participant selection*. As shown in the analyses of the *definitions* in the Study design stage (see Section 4.2), reconstrued activity entities enable the RCT report writer to use static definitions and/or characterisation to construe dynamic series of activities. In this case, the characterisation of *selection* subsumes the meaning of the observed people entity *participant*, while *participant selection* can be used to characterise the semiotic entity *criteria*. Within the narrowed dataset, the methodology recounts were found to introduce *participants* and/or *selection criteria* as linguistically defined entities with a view to providing a record of *participant selection*.

The BMJ-1 *definition* of *eligible participants* offers a good illustration of a study-specific *participant definition* containing the record of *participant selection* (see (4.21)).

> (4.21) Eligible participants were individuals with access to the internet, with a principal diagnosis of body dysmorphic disorder according to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5),[1] and with a score of at least 20 on the modified Yale-Brown obsessive-compulsive scale (BDD-YBOCS).[27] (BMJ-1)

In (4.21), the *participants* are *defined* through a past tense co-elaborated state figure. Specifically, they are characterised as *eligible* and classified as the observed people *individuals*. Since any classification taxonomy entails a set of categorically different co-class members (e.g., *eligible individuals* vs. *ineligible individuals*), it is possible to construe regulated and/or facilitated activity series by qualifying the hypernym (e.g., *individuals*) with reconstrued activity entities (see Fig. 4.7).
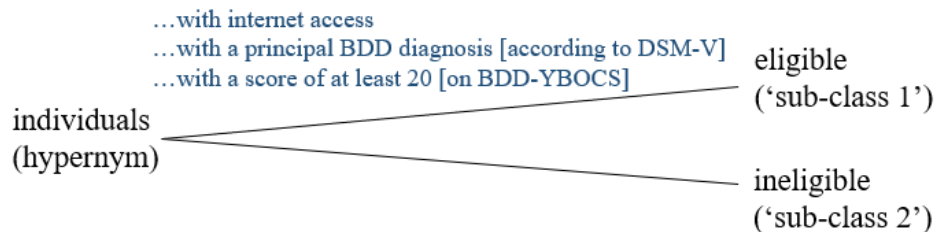
Figure 4.7: Construing 'condition' connexions through classification and qualification.

As shown in Figure 4.7, the hypernym *individuals* is qualified by three activity entities that condition the sub-classification of *individuals* as *eligible participants* (*internet access*, *BDD diagnosis,* ≥20 *score*). Had the writer chosen not to use activity reconstrual, the regulated activity series would have been realised by a sequence of occurrence figures conditioning participant eligibility, as shown in (4.22).

> (4.22) Individuals were eligible *if* ['consequence: condition'] they could access the internet, *if* ['consequence: condition'] they were diagnosed with BDD, *and if* ['addition & consequence: condition'] they scored at least 20.

Therefore, the use of these qualifiers is agnate to the strategy that introduces the selection *principles* (see Section 4.3.1.2). Additionally, the reconstrued activities that represent moments of the selection activity – *diagnosis* and *score* – are further qualified to specify the facilitatory instrument things – *DSM-5* and *BDD-YBOCS*. Thus, had there been no activity reconstrual, the facilitated activity series would have been construed through a temporal sequence of occurrence figures, as shown in (4.23).

> (4.23) …individuals were diagnosed with BDD *by* ['consequence: means'] using DSM-5[1]… they scored at least 20 **after** ['time: successive'] completing BDD-YBOCS[27].

Thus, the additional qualification of the reconstrued selection steps can be considered agnate to the act of instrumenting the enacted occurrence figures in the facilitation strategy (see Section 4.3.1.1).

As already mentioned, it is also possible to focus on a study-specific *definition* of *selection criteria*. In this case, through characterisation, the semiotic entity *criterion* subsumes

the meaning of the enacted activity entity – either *inclusion* or *exclusion*. As illustrated in (4.24), this expression can be unpacked as a regulated activity at the field level.

> (4.24) The participants were included / excluded if…

This enables the writers to introduce a list of conditions through co-elaboration (see (4.25)).

> (4.25) Exclusion criteria included <u>active</u> **psychosis**; <u>attempted</u> **suicide** <u>associated with an index case of post-partum depression</u>; <u>history</u> of **seizures, bipolar disorder, schizophrenia,** or **schizoaffective disorder**; and history of **alcoholism** or **drug addiction (including benzodiazepines)** <u>in the 12 months before screening</u>. (LANCET-2)

In (4.25), the semiotic *exclusion criteria* co-elaborate with either a reconstrued characteristic (e.g., *psychosis; schizophrenia*) or observational activity entities (e.g., *suicide, seizure*). Had there been no reconstrual, these entities would have been realised as figures:

- characteristic entities as state figures (e.g., *they are currently psychotic/had been schizophrenic*); and
- observational activity entities as occurrence figures (e.g., *they had attempted suicide; their bodies had seized up*).

As indicated in (4.25), the reconstrued entities are also characterised and qualified to graduate them in terms of 'extent: proximity: time' (*active*; *in the 12 months before screening*), 'fulfilment: actualisation' (*attempted*) and 'valeur: specificity' (*associated with…*). This is comparable to the second (i.e., *principles*) strategy, which uses situated figures to add more details on the participants' treatments and health-related occurrences/characteristics (see Section 4.3.1.2).

In conclusion, the main advantages of using study-specific *definitions* of *eligible participants* and *criteria* in Record: participant selection can be summarised as follows:

- facilitated and regulated activity series can be construed within a single definition; and
- experiential content can be highly condensed through complex qualification.

4.3.1.4 Construing the field of participant selection by combining the strategies

As already mentioned, RCT report writers tend to construe the field of *participant selection* by combining strategies that moment the activity and define the participants or selection criteria. Table 4.8 illustrates this practice using an abridged version of JAMA-1's Record: participant selection stage.

Table 4.8: The abridged version of the Record: participant selection stage in the methodology recount of JAMA-1.

Staging	Text (JAMA-1)
Record: participant selection	**Participant selection**
definition (participants) *steps*	Eligible participants were VHA patients, 18 years or older, with an MDD [major depressive disorder] diagnosis, who were referred by their VA clinicians. Diagnostic eligibility was further established by research staff using criteria from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR), supplemented with the 9-Item Patient Health Questionnaire.[16] Study clinicians determined final diagnoses.
definition (participants) *definition (criteria)*	Patients with a suboptimal response to a treatment course with a selective-serotonin reuptake inhibitor, serotonin and norepinephrine reuptake inhibitor, or mirtazapine were eligible [participants]. Suboptimal response was defined as a score of 16 or more on the 16-Item Quick Inventory of Depressive Symptomatology-Clinician Rated (QIDS-C16) questionnaire[17] after at least 6 weeks of treatment.
principles	Patients were excluded if they were receiving current treatment with bupropion or any antipsychotic; had a lifetime history of bipolar disorder, schizophrenia, schizoaffective disorder, or other psychosis.

To begin, JAMA-1's writer classifies the *eligible participants* as *VHA patients* and uses qualifiers to introduce selection criteria.

> (4.26) Eligible participants were VHA patients, 18 years or older, with an MDD diagnosis, who were referred by their VA clinicians.

As shown in (4.26), these qualifiers provide additional details on the participants' characteristics (*18 years or older*, *MDD diagnosis*), as well as the trial locations and settings (*referred by their VA clinicians*). As the second qualifier (*with an MDD diagnosis*) contains a reconstrued enacted activity conducted during the participant selection, the participant *definition* is followed by a temporal sequence of occurrence figures expressing the diagnostic *steps* (see Fig. 4.8).
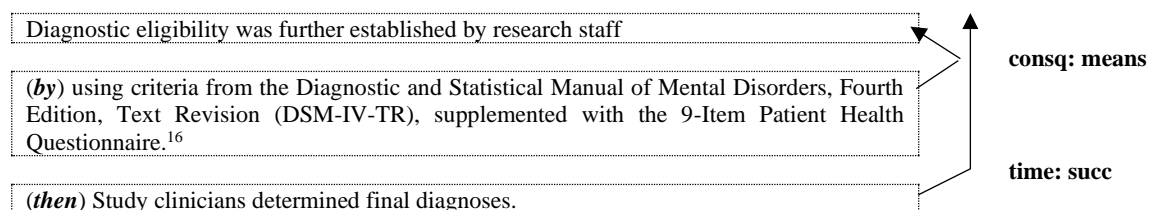
Figure 4.8: CONNEXION analyses of the temporal sequence in JAMA-1's Record: participant selection.

Linked by 'time: successive' and 'consequence: means' connexions, these figures provide a record of how the MDD diagnosis was facilitated during the selection process. That is, they specify the observer people involved (*research staff; study clinicians*) and the instrumental things used (*DSM-IV-TR; the 9-Item Patient Health Questionnaire*). The latter entities are flagged for '+valuation' by (a) introducing a publication entity via referencing (*[16]*); and (b) graduating their 'valeur: specificity' (*Diagnostic and Statistical… of Mental Disorders, supplemented with…*) and 'extent: proximity: time' (*Fourth Edition*).

In the second paragraph, JAMA-1's writer adds another *definition* of the *eligible participants* (see (4.27)).

> (4.27) Patients with a suboptimal response to a treatment course with a selective-serotonin reuptake inhibitor, serotonin and norepinephrine reuptake inhibitor, or mirtazapine were eligible.

In this case, the qualification of *patients* includes the observational activity entity *suboptimal response*, which is qualified to provide more information on the participants' treatments (*to a treatment course…*). Since the characterisation of the *patients' response* as *suboptimal* involved human judgement during the recruitment activity, a *definition* of the criterion used for assessment is also included (see (4.28)).

> (4.28) Suboptimal response was defined as a **score** of <u>16 or more</u> on the QIDS-C16 questionnaire[17] <u>after at least 6 weeks</u> of **treatment**.

First, *suboptimal response to treatment* is classified as the observational activity entity *a score*. Then, *a score* is qualified to introduce criteria for distinguishing between the *suboptimal* and other kinds of *response*. As indicated in (4.28), the *score* is quantified in terms of its 'amount' (*16 or more*) and specified with reference to the instrumental thing entity (*QIDS-C16*). Furthermore, the *treatment* is measured in terms of its 'extent: distribution: time' (*at least 6 weeks*). Therefore, the *suboptimal response definition* provides additional information on the facilitation and time of the assessment, which allows the reader to evaluate the reliability and applicability of the RCT report findings.

In the final paragraph, JAMA-1's writer introduces a list of *principles* through a causal sequence (see Fig. 4.9).
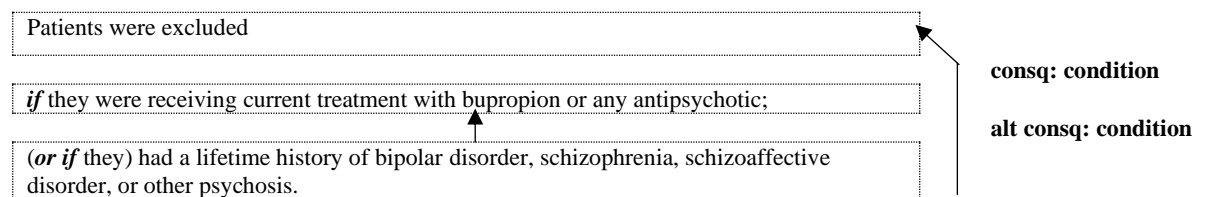
Figure 4.9: CONNEXION *analysis of the causal sequence in JAMA-1's Record: participant selection.*

As shown in Figure 4.9, the conditions specify the 'extent: distribution/proximity: time' of the circumstances that led to the exclusion of potential participants (<u>*current* treatment</u>; <u>*a lifetime history of bipolar disorder*</u>). Arguably, a lack of qualifiers commenting on how the health-related characteristics were diagnosed suggests that these diagnoses were not performed during the participant selection process. Moreover, since both treatments and health conditions can interfere with the trial results and/or jeopardise the patient's wellbeing, these exclusion criteria also indicate scientific rigour and ethical practice.

Overall, JAMA-1's Record: participant selection stage comprises several complementary phases that construe the field of *participant selection* by giving a record on the

locations, settings, steps, and criteria. Although the primary purpose of this stage is to provide the readership with the information necessary for assessing the external validity of the results, this section has showed that it also allows for an evaluation of the ethics, scientific rigour, and credibility of the overall trial.

4.3.2 The Record: randomisation&masking stage

The CONSORT Statement (Checklist Items 8-11) requires that RCT report writers disclose detailed information on the randomisation and masking procedures so that the reader can evaluate "the likelihood of *bias* [emphasis added] in group assignment" (Moher et al., 2010, p. 9). Accordingly, the Record: randomisation&masking stage is both epistemological and attitudinal to some extent. On the one hand, its purpose is to elaborate on the steps conducted as part of the RCT study design; on the other hand, it aims to position the readership to appraise the participant allocation method as *unbiased* ('+valuation'). In this thesis, Record: randomisation&masking is considered to be primarily epistemological because randomisation and masking characterise RCTs. Put simply, for a trial to be classified as an RCT, its participants need to be allocated to their treatments in a random manner. Therefore, the field of this stage can be defined as the momented facilitated activity of *randomising* and *masking* participant allocation. The discourse semantic analysis revealed that this field is realised through a temporal sequence of past tense enacted occurrence figures.

To illustrate a prototypical Record: randomisation&masking stage found in the dataset, this section takes the LANCET-1 methodology recount as its point of departure (see Fig. 4.10).
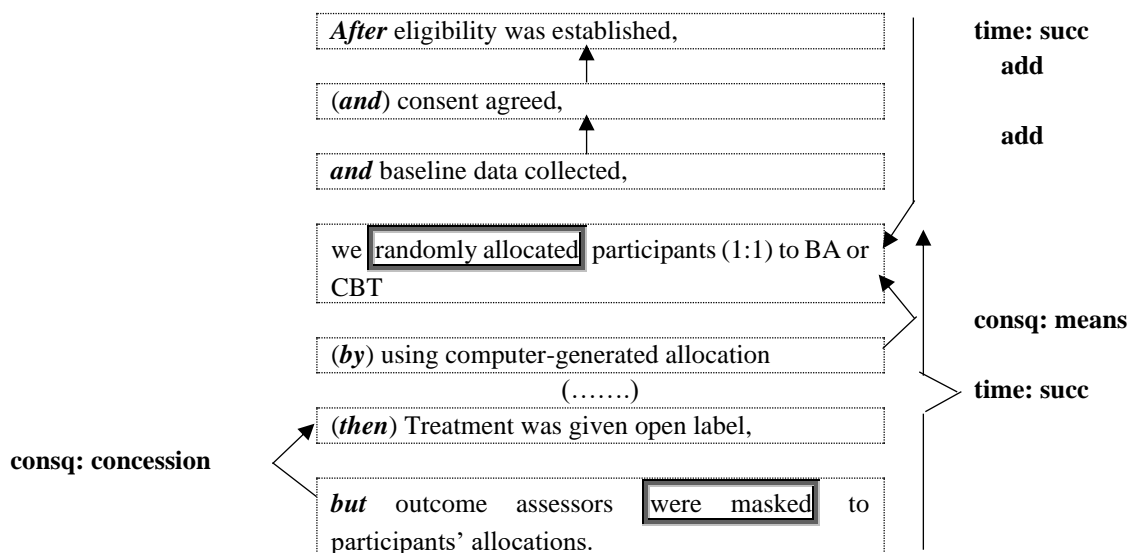
Figure 4.10: CONNEXION analysis of the main steps in LANCET-1's Record: randomisation&masking.

Figure 4.10 shows the temporal sequence of the main enacted occurrences (i.e., *steps*) involved in LANCET-1's randomisation and masking. To form the sequence, the writer uses 'time: successive' (*after, then*) and 'consequence: means' (*by*) connexions. There is also an internal

'consequence: concession' (*but*) connexion, which will be discussed later as a resource for addressing the reader's potential concerns. Like the recruitment *steps* (see Section 4.3.1.1), the randomisation&masking occurrence figures contain facilitators (*we*) and facilitatory entities (*computer-generated allocation*).

The two *steps* highlighted in Figure 4.10 – *randomly allocating participants* and *masking outcome assessors to participant's allocations* – can be observed as hyperThemes since they are further elaborated through *sub-step* sequences. To illustrate, Figure 4.11 shows the temporal sequence that construes the momented facilitated activity *randomisation*.
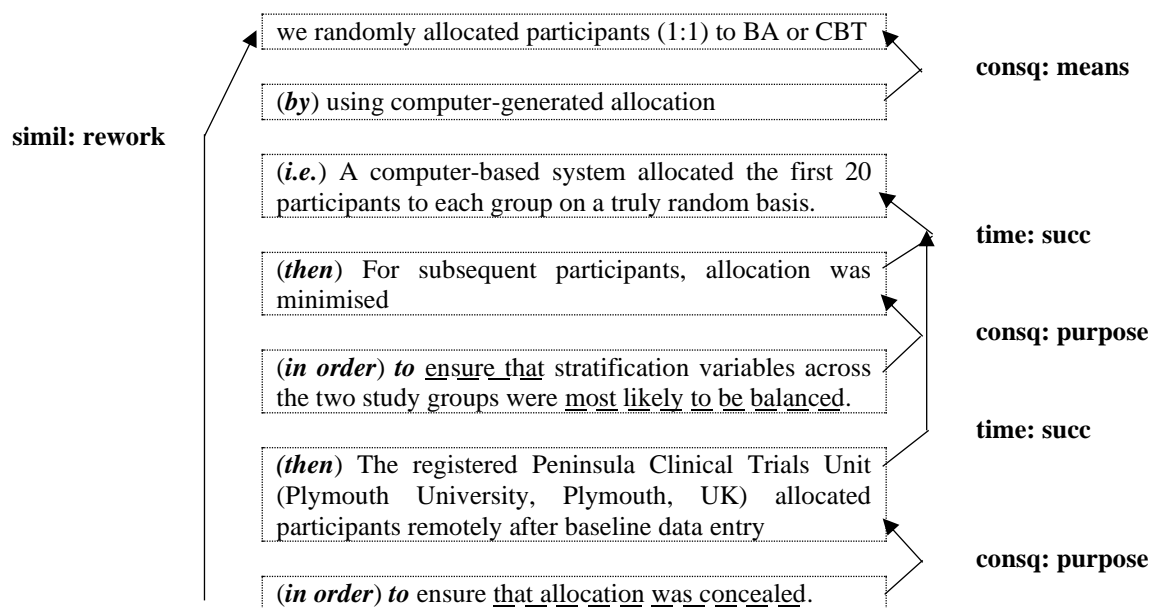
Figure 4.11: Momenting randomisation in LANCET-1's Record: randomisation&masking (with unpacked grammatical metaphors).

The elaboration of the critical RCT *steps* through *sub-step* sequences was found to be common practice across the dataset. As far as experiential content is concerned, the main role of these sequences is to provide additional information on the relevant participants, locations, and settings. For instance, LANCET-1's writer introduces more specific facilitators (e.g., *The Peninsula Clinical Trials Unit*) and a range of circumstantial elements, including manner (e.g., *on a truly random basis*), place and time (e.g., *after baseline data entry*). In addition, 'consequence: purpose' (*in order to*) connexions are used to express the intended effect of particular *sub-steps* (e.g., *in order to ensure that allocation was concealed*).

As mentioned at the start of this section, this stage plays an important evaluative role in assuring the readership that the trial was truly randomised. To further discuss the attitudinal aspects of Record: randomisation&masking, it is now useful to retrieve the complete stage from LANCET-1 (see Table 4.9).

Table 4.9: The Record: participant selection stage in the methodology recount of LANCET-1 (coded for inscribed ATTITUDE*).*

Staging	Text (LANCET-1)
Record: randomisation&masking	**Randomisation and masking**
step 1	After eligibility was established, consent agreed, and baseline data collected, we randomly allocated participants (1:1) to BA or CBT using computer-generated allocation, stratified by depression severity according to the Patient Health Questionnaire 9 (PHQ-9)[11] (<19 *vs* ≥19), antidepressant use (taking antidepressants or not), and recruitment site (Devon, Durham, or Leeds). A computer-based system allocated the first 20 participants to each group on a truly random basis. For subsequent participants, allocation was minimised to maximise the likelihood of **balance** in **stratification variables** across the two study groups. The registered Peninsula Clinical Trials Unit (Plymouth University, Plymouth, UK) allocated participants remotely after baseline data entry to ensure allocation concealment. Treatment was given open label, but outcome assessors were masked to participants' allocations. Concealment was ensured by use of an externally administered **password-protected** **trial website** with retention of a stochastic element to the minimization algorithm. We recorded instances when outcome assessors were unmasked during interviews if participants informed them of their allocation.
sub-steps	
step 2 *sub-steps*	
principle	

As indicated in Table 4.9, LANCET-1's Record: randomisation&masking contains only two instances of inscribed ATTITUDE – *balance* and *password-protected*. However, there are a range of ENGAGEMENT and GRADUATION resources employed to suggest the trial's minimisation of bias. Specifically, the in-depth analysis of the narrowed dataset identified two important issues that RCT report writers, including the LANCET-1 writer, seek to address:

- the degree of objectivity involved in randomisation and masking; and
- the decision to (un)blind the observer entities that facilitate the interventions and/or outcome assessment.

Since it is randomisation and masking that makes RCTs the gold standard for evaluating treatments, a great effort is spent on demonstrating the objectivity of those who performed these activities. As can be seen in Table 4.9, the trial personnel tend to be realised implicitly or pronominally (e.g., *we*), which seems to downplay the role of potentially biased and/or fallible human facilitators. By contrast, instrumental things and institutions are readily used as perpetrator entities (cf. perpetrator role in Hao, 2020a). In (4.29), for example, the use of the instrumental thing *a computer-based system* as the non-human perpetrator affords '+valuation' of the facilitated LANCET-1 *allocation*, which is further flagged by sharpening 'valeur: authenticity' of the characteristic *random*.

> (4.29) A computer-based system **allocated** the first 20 participants to each group on a <u>truly</u> **random** basis.

Similarly, graduation is used to flag '+veracity' of the institution *Clinical Trial Unit* as an independent and unbiased *allocation* facilitator (see (4.30)).

> (4.30) The registered <u>Peninsula</u> **Clinical Trials Unit** (<u>Plymouth University, Plymouth, UK</u>) allocated participants remotely…

As indicated in (4.30), the characterisation of *the Unit* (*Peninsula* and *Plymouth, UK*) decreases its '+extent: proximity: space' relative to LANCET-1's recruitment sites (*Devon, Durham, or Leeds* in Table 4.9). In turn, this flags '+valuation' of the facilitated *allocation concealment*. Within the narrowed dataset, the emphasis on the facilitator's relatively low 'extent: proximity: space' emerged as a common way of flagging their '+veracity'. For example, JAMA-1's and LANCET-2's stage realisations relate the quality *independent* to *evaluators* and *statisticians*, while BMJ-1 characterises *a party* as *external*.[44] In other words, it can be argued that the more "distant" the facilitator is from the trial, the more likely it is that the reader will be positioned to recognise their objectivity.

As exemplified in Table 4.9 and (4.31-32), '+valuation' of LANCET-1's *randomisation and masking* is also ascertained by evaluating facilitatory entities (*trial website* in (4.31); (*stratification variables* in (4.32)).

> (4.31) …an externally administered **password-protected** ['+valuation'] **trial website**
>
> (4.32) …**balance** [+composition] in **stratification variables** across the two study groups

Similar appraisals of '+composition' and '+valuation' were found across the dataset:

- the quality *balanced* inscribes '+composition' of the *randomization scheme* and *stratification factors* in JAMA-1 and NEJM-2, respectively; and
- the quality *secure* inscribes '+valuation' of both instrumental things (*website* in BMJ-1; *application* in JAMA-1/2) and enacted activity entities (*method* in LANCET-2).

Since *balance* and *security* suggest equal group allocation opportunities and protection against (un)intentional unmasking, these assessments are likely to position the reader to assign '+valuation' to the facilitated *randomisation and masking*. The notion of *security* is nearly always combined with the characteristic *computer/web-based*, which can be understood as an additional effort to flag objectivity by lowering the 'extent: proximity: space' of the facilitatory entities relative to the on-site trial personnel (i.e., virtual vs. physical space).

Finally, it was found that writers often use attitudinally oriented facilitation to highlight the 'fulfilment: actualisation' of *randomisation and masking*, ultimately saturating '+valuation' of the study as an *RCT*. For instance, LANCET-1 employs 'consequence: purpose/means' connexions to introduce the *steps* undertaken to instigate (i.e., *ensure*) *allocation concealment* (see (4.33)).

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[44] The quality *independent* is interpreted as graduating 'extent: proximity: space' relative to the trial because of its meaning of *not being involved*.

(4.33) …allocated participants remotely…***to*** ['consequence: purpose'] <u>ensure</u> **allocation concealment**. (…) **Concealment** was <u>ensured</u> ***by*** ['consequence: means'] use…

Following allocation concealment, RCTs are expected to continue blinding the treatment providers and outcome assessors so as to minimise the possibility for bias (Moher et al., 2010). For example, BMJ-2's, LANCET-2's, and NEJM-2's writers, which all report on the effectiveness of pharmacologic treatments, relate the qualities *indistinguishable* and *identical* to the instrumental thing *drug packaging*, thus invoking '+valuation' of the blinding activity. However, the CONSORT Statement concedes that "blinding, unlike allocation concealment, may not always be appropriate or possible" (Moher et al., 2010, p. 12). In these cases, there is a need to disclose/justify any instances of unblinding and elaborate on how any potential negative effects were mitigated. In the dataset, the issue of (un)blinding is addressed through contracting heteroglossia – namely 'countering', 'denying', and/or 'justifying' propositions. For instance, LANCET-1 acknowledges that the *treatment was open label*, meaning both the involved observers (*treatment providers*) and observed people (*participants*) were aware of the allocation. Nevertheless, any proposition doubting the objectivity of LANCET-1's findings is immediately 'countered' (see (4.34)).

(4.34) Treatment was given open label, ***but*** ['consequence: concession'] outcome assessors were masked to participants' allocations.

In (4.34), the concessive link introduces the fact that the outcome measurement facilitators – the observer entity *outcome assessors – were masked to participants' allocations*. The masking *step* is further elaborated through a sequence of two *sub-steps*: *using an externally administered password-protected website* and *recording unmasking instances* (see Table 4.9). Furthermore, accounting for the possibility of accidental unblinding, the latter *sub-step* enters a causal sequence that construes the activity series that regulates cases of accidental unblinding (see (4.35)).

(4.35) We recorded instances when outcome assessors were unmasked during interviews ***if*** ['consequence: condition'] participants informed them of their allocation.

Another representative example of using heteroglossia and causal sequencing to tackle the issue of (un)blinding can be found in LANCET-2, which reports on the effectiveness of the drug *brexanolone* in treating post-partum depression (see (4.36)).

(4.36) The pharmacist at each site who prepared the infusion bags according to the randomisation schedule, and a monitor who performed drug accountability during the study, were not masked to treatment assignment. ***[However,] No*** other study personnel were unmasked until after formal locking of the study database. (…) ***In the event*** ['consequence: condition'] of a medical emergency, the pharmacist was to reveal actual infusion contents to the primary investigator, who was to alert the sponsor of the emergency. In all cases, ***if*** ['consequence: condition'] the study drug

allocation for a patient had been unmasked, pertinent information (including the reason for unmasking) was to be documented in the patient's records and on the electronic case report form. ***If*** ['consequence: condition'] the patient or study centre personnel were unmasked, the patient was to be terminated from the study. ***[However] No*** such unmasking occurred during the study. (LANCET-2)

In (4.36), the first sentence reveals the unblinding of two observers facilitating the intervention – *the pharmacist at each site* and *a monitor*. Both entities are further qualified via embedded clauses, which specify the facilitated occurrence figures – *preparing the infusion bags* and *performing drug accountability*. [45] Since these occurrences construe essential and ethical intervention steps that require knowledge of the treatment allocation, the nature of the facilitators' roles appear to provide an implicit 'justification' for their unblinding. [46] Furthermore, as was the case with LANCET-1, LANCET-2's writer utilises a number of 'consequence: condition' (*if*) connexions to clarify the regulations put in place in case of unintentional unmasking. Eventually, 'countering' and 'denial' (*however*, *no such unmasking/no other unmasking*) are used to dispel any remaining doubts over the trial's objectivity.

To summarise, Record: randomisation&masking consists of a series of facilitated activities realised through temporal sequences of enacted occurrences (i.e., *steps*). In these figures, the writers tend to emphasise the use of *secure* instrumental things and *independent* institution/observer entities, which aims to *ensure* the 'fulfilment: actualisation' of *randomisation* and *masking*. To address the issue of potential unblinding, temporal sequences are sometimes accompanied by contracting heteroglossia and causal sequencing (i.e., regulated activities).

4.3.3 The Record: interventions stage

As per the CONSORT Statement (Checklist Item 5), RCT reports need to elaborate on "the interventions for each group with sufficient details to allow replication, including how and when they were actually administered" (Moher et al., 2010, pp. 3, 6). Thus, the purpose of the Record: interventions stage is to moment the facilitated activity of *treating RCT participants*.

The Record: interventions stage in LANCET-2's methodology recount offers a solid starting point for a discussion on the discourse semantic features of this stage. Figure 4.12

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[45] According to the US National Cancer Institute (NCI), drug accountability entails recording critical information on drugs, "including the drug name, lot number, expiration date, the amount of drug received, used, returned, or thrown away, and the amount left. Drug Accountability Records help make sure that a clinical trial is done safely and correctly" (cancer.gov, accessed on 7/7/20).

[46] A more explicit example of unblinding 'justification' can be found in BMJ-1: *Because of the nature of the intervention, participants and therapists were not blinded to treatment.*

outlines the main *steps* involved in LANCET-2 intervention – *brexanolone/placebo injection* as a treatment for post-partum depression.

Each patient received a single continuous intravenous infusion of masked study drug for 60h during inpatient care

consq: means

by adhering to the following schedule: 30µg/kg per h (0–4h); 60µg/kg per h (4–24h); 9µg/kg per h (24–52h); 60µg/kg per h (52–56h); 30µg/kg per h (56–60h).

(….)

time: succ

(then) After dosing was completed,

time: succ

patients were followed up until day 30,

add

and clinical and safety assessments were done at days 7 and 30.

Figure 4.12: CONNEXION analysis of the main steps in the LANCET-2 Record: interventions (with underlined grammatical metaphors).

As expected, LANCET-2's Record: interventions is realised through a temporal sequence of past tense enacted occurrences linked via 'time: successive' (*then, after*) and 'consequence: means' (*by*) connexions (i.e., the *steps* phase in Fig. 4.12). The orbital configurations of the sequenced figures include people, instrumental things, and enacted activity entities. From "below", observers are realised implicitly through lexicogrammatical Actors/Behavers (e.g., *was completed/were followed up (by us)* in Fig. 4.12)). On the other hand, the observed people are construed through Actors in processes denoting passive reception (*each patient received*) or Phenomenon-like participants (*patients were followed up*). Furthermore, the instrumental things (*masked study drug*) and reconstrued enacted activities (*intravenous infusion, schedule, clinical and safety assessments*) constitute facilitatory entities, which are typically realised through lexicogrammatical Goals. To provide additional details on how the interventions were administered, the sequenced figures are either situated (*done at days 7 and 30*) or distributed (*received for 60h during inpatient care*, *followed up until day 30*). At the lexicogrammatical level, occurrence situations/distributions are realised through Circumstance: location/extent. In addition, the facilitatory entities are quantified in terms of 'amount' and 'extent: distribution: time' (e.g., *30 µg/kg per h (0–4 h)*).

The discourse semantic features identified and illustrated in Figure 4.12 are characteristic of the Record: intervention stages across the narrowed dataset. These include temporal sequencing of enacted occurrences, quantification of facilitatory entities, and frequent instances of spatio-temporal occurrence location/distribution. However, the in-depth analysis also revealed some minor variations in the potential for multiple lexicogrammatical realisations of the observed people entities. As shown in Figure 4.12, the records of drug interventions can

realise the observed people as lexicogrammatical Actors or Phenomenon-like participants. Although the former functional category may suggest an agentive role, both realisations indicate a lack of agency because *receive* can be understood as an instance of passive reception. When recounting psychological treatments, however, the writers occasionally assign agency to the observed people, giving them the facilitator status in an intervention *step* (see (4.37)).

(4.37) Between sessions, participants listened to audio recordings of the imaginal recounting daily and completed in-vivo exercises. (JAMA-2)

In (4.37), for example, it is the observed people *participants* that use the instrumental thing (*audio recordings*) and the enacted activity entity (*in-vivo exercises*) to complete the prolonged exposure therapy (i.e., JAMA-2's intervention). Arguably, a higher degree of the participant's agency in nonpharmacologic intervention records could be attributed to the nature of the conducted interventions. Specifically, while the outcome of drug treatments such as *brexanolone* relies on the participant's body *receiving* the necessary chemicals, the results of psychological treatments such as *prolonged exposure therapy* are dependent on the participant's active engagement. Be that as it may, nonpharmacologic Record: interventions stages still consider observer entities the primary treatment facilitators. This is particularly visible in the configurations of instigated enacted occurrence figures, as illustrated in Table 4.10.

Table 4.10: The orbital structure of an instigated enacted occurrence figure in JAMA-2's Record: interventions.

	outer orbit				
	inner orbit				
	nucleus				
	centre				
discourse semantics	instigated occurrence	=+entity (Domain)	+entity		xx entity (Instigator)
(4.38)	*helped…identify*	*stressors*	*participants*		*therapists*
lexicogrammar	Process: behavioural (cognition)	Range / Phenomenon-like	Medium / Behaver		Agent
	v. group complex	nominal group	nominal group		nominal group

In Table 4.10, the orbital configuration of (4.38) shows the *participants* as actively involved in the facilitation of *stressor identification*. However, it is the observer *therapists* that are given agency as the instigator entity.

In addition to using temporal sequencing to construe momented facilitated activities, Record: interventions stages tend to employ internal CONNEXION to provide a more detailed record, which may include *step* contextualisation and/or justification (see Fig. 4.13).
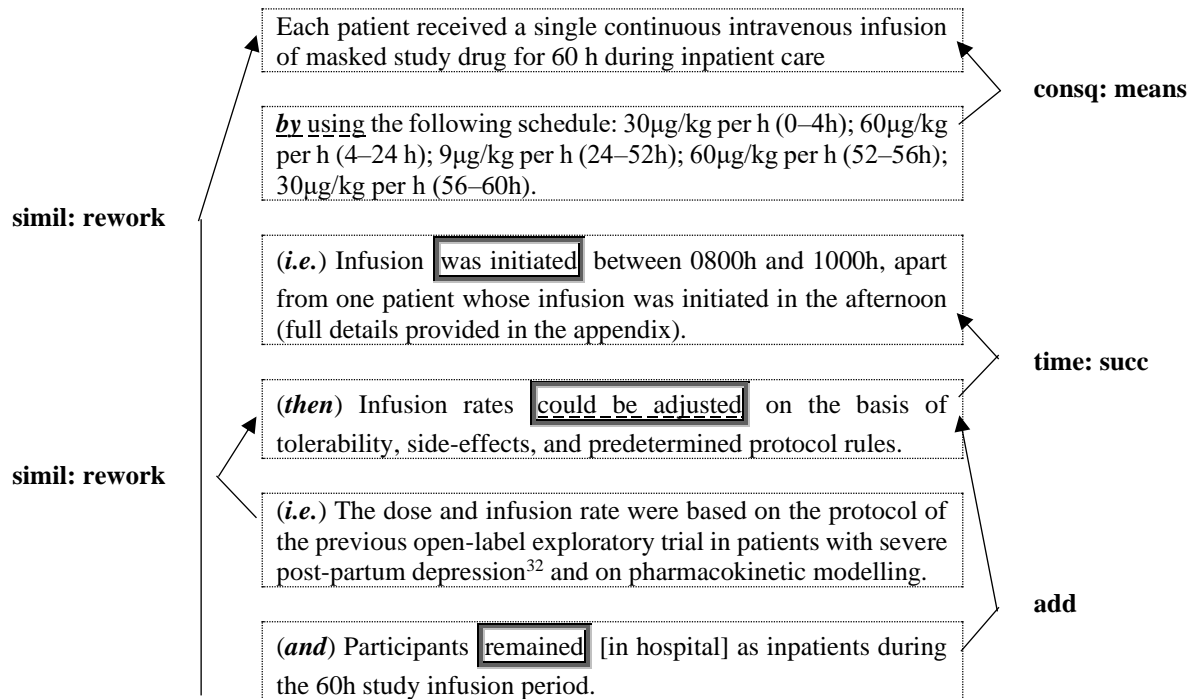
Figure 4.13: Momenting treatment in LANCET-2's Record: interventions (with <u>unpacked grammatical metaphors</u>).

For instance, Figure 4.13 shows the use of the implicit 'similarity: rework' (*i.e.*) connexion, which introduces a temporal sequence of the *sub-steps* elaborating one of the LANCET-2 *steps – receiving a single continuous intravenous infusion of masked study* in LANCET-2 trial. To specify the time aspect of the intervention, the initial *sub-step* is located (*between 0800h and 1000h, in the afternoon*), while the final *sub-step* is distributed (*during 60 h study infusion period*). Furthermore, the second *sub-step* is construed through two figures linked via another implicitly realised 'similarity: rework' connexion (see 4.39-40).

> (4.39) Infusion rates could be adjusted on the basis of tolerability, side-effects, and predetermined protocol rules.

> (4.40) The dose and infusion rate were based on the protocol of the previous open-label exploratory trial…

In (4.39), figure reasoning (*on the basis of…*) is used to afford '+valuation' of the LANCET-2 intervention. Specifically, while the observations of *tolerability* and *side-effects* indicate ethics, the existence of *predetermined protocol rules* implies scientific rigour. Similarly, (4.40) uses a correlation (*were based on*) to link the measured enacted activity entity (*the dose and infusion rates*) and the semiotic needs (*protocol*), which re-affirms scientificity. In addition, (4.40) indicates an implicit 'justification' of the proposition that *the dose and infusion rate* were appropriate, flagging '+valuation' of the intervention. Finally, as LANCET-2 tests the effectiveness of brexanolone injections in post-partum depression, the sharpened 'valeur: specificity' of the *previous trial* flags '+valuation' of the *protocol* (see (4.41)).

> (4.41) …<u>open-label exploratory</u> **trial** <u>in patients with severe post-partum depression</u>[32] <u>and on pharmacokinetic modelling.</u>

Following the CONNEXION analyses presented in Figures 4.12 and 4.13, it is now possible to present the generic structure of the entire LANCET-2 Record: interventions stage (see Table 4.11).

Table 4.11: The Record: interventions stage in the methodology recount of LANCET-2 (coded for ENGAGEMENT).

Staging	Text (LANCET-2)
Record: interventions *step 1* *sub-steps* *steps 2&3*	Each patient received a single continuous intravenous infusion of masked study drug for 60 h during inpatient care under the following schedule: 30 μg/kg per h (0–4 h); 60 μg/kg per h (4–24 h); 9 μg/kg per h (24–52 h); 60 μg/kg per h (52–56 h); 30 μg/kg per h (56–60 h). Infusion was initiated between 0800 h and 1000 h, apart from one patient whose infusion was initiated in the afternoon (full details provided in the appendix). Infusion rate adjustments were allowed on the basis of tolerability, side-effects, and predetermined protocol rules. The dose and infusion rate were based on the protocol of the previous open-label exploratory trial in patients with severe post-partum depression[32] and on pharmacokinetic modelling. Participants remained as inpatients during the 60 h study infusion period. After dosing was completed, patients were followed up until day 30, with clinical and safety assessments done at days 7 and 30.

When it comes to interacting with the discourse community, Table 4.11 shows that the Record: interventions stage is almost entirely monoglossic, which is unsurprising given its epistemological nature. However, Table 4.11 also indicates that RCT report writers sometimes use 'justification' to position the reader towards appraising the interventions with '+valuation'. Appearing in six out of the eight RCT reports, 'justification' has been found to be the most common instance of heteroglossic ENGAGEMENT within the narrowed dataset. It can be signalled by correlations such as *be based on* (see Table 4.11) or, more often, by consequential connexions (see 4.42)). As illustrated in (4.42), 'justification' is occasionally combined with other heteroglossic features, which open more space for negotiating the positive value of the facilitated activities.

> (4.42) The tDCS [transcranial direct-current stimulation] protocol had more sessions than in earlier trials because recent **studies** have suggested that more sessions could produce greater **clinical effects**.[13,14] (NEJM-1)

In (4.42), the appropriateness of adopting the *tDCS protocol* is showcased by a conjoint use of 'justification' and 'attribution'. Through 'attribution', the positive assessment of the *tDCS protocol*, flagged by an intensified 'amount' of semiotic results (*greater clinical effects*), is extra-vocalised and "pushed" to the domain of communal objectivity. Moreover, the quality *recent*, which graduates the *studies* with reference to their 'extent: proximity: time', serves to flag '+valuation' of the external Appraiser.

In addition to using heteroglossia, it was found that some writers rely on GRADUATION and inscribed ATTITUDE to tackle the issues of scientific rigour and credibility. To indicate the

reliability of the facilitated interventions, two Record: interventions stage realisations (LANCET-1, NEJM-1) use extensive qualification to saturate a positive prosody of the observers as facilitator entities. To illustrate, (4.43) highlights the evaluative language used at the very opening of LANCET-1's Record: (CBT) intervention.

> (4.43) **Professional** or equivalently **qualified** **psychotherapists**, **accredited** as CBT **therapists** with the British **Association** of Behavioural and Cognitive Psychotherapy, with a postgraduate **diploma** in CBT, delivered a personalized treatment programme. (LANCET-1)

In (4.43), the attitudinal qualities *professional* and *qualified* are used to reclaim the '+capacity' reading from the axi-tech *psychotherapists*, which inscribes '+capacity' of the facilitators. This is reinforced in the subsequent instigated state figure, which co-elaborates the *psychotherapists* with the observer entity *CBT therapists*. Here, the characterisation of *therapists* as *CBT* sharpens their 'valeur: specificity', thus flagging '+capacity'. Furthermore, the instigation *accredited* introduces an institution as the external Appraiser of LANCET-1 facilitators (*the British Association of Behavioural and Cognitive Psychotherapy*). The validity of *the Association*'s assessment is further flagged by its 'extent: proximity: space' and 'valeur: specificity' relative to LANCET-1's place and object of study (*British…Behavioural and Cognitive psychotherapy*). Finally, the positive prosody of the facilitators is saturated by flagging '+valuation' of their *diploma* through its sharpened 'valeur: specificity' (*postgraduate…in CBT*).

To suggest transparency, three Record: interventions stages (LANCET-1/2, NEJM-2) refer the reader to a semiotic locution entity (e.g., *appendix*) or an external publication entity for additional study protocol details. The intensified 'amount' of the available intervention protocol (e.g., *full details*) is often used to flag '+valuation' of the *RCT report*. As exemplified in (4.44), this information can be attached to an enacted occurrence figure using parentheses.

> (4.44) Infusion was initiated between 0800 h and 1000 h, apart from one patient whose infusion was initiated in the afternoon (full **details** provided in the appendix). (LANCET-2)

Alternatively, (4.45) shows that the writer may opt for a *comment* phase, which flags transparency through an instigated co-elaborated figure that locates the *additional information* (*additional information* → part → *Supplementary Appendix*).

> (4.45) Additional ['intensified amount'] **information** on escalating dose schedules, the timing of escalation, the criteria for halting escalation, and the differences in maximum dose between men and women is provided in the Supplementary Appendix. (NEJM-2)

Although references to the text-external protocol documentation as well as the external appraisal of the therapists' '+capacity' aim to convince the reader of the *trial's* '+valuation', these features seem to suggest rather than demonstrate scientific rigour and credibility of the

entire RCT. Put simply, the reader is still required to examine the information outside the main text to determine whether the RCT followed a sound study design. Similarly, there is a need to elaborate on the standardisation steps (e.g., supervision, trial-specific training) to ensure that the interventions were facilitated in a proficient as well as in a consistent manner. According to an extended explanation of the CONSORT Statement, the issue of standardisation is particularly relevant to the trials of nonpharmacologic treatments (Boutron et al., 2008). Thus, to demonstrate scientific rigour and credibility in a more explicit way, the in-depth analysis revealed that RCT report writers tend to include Intervention protocol and Standardisation stages, which are realised by attitudinal generic components (see Sections 4.5.1 and 4.5.2).

In conclusion, a discourse semantic investigation of the Record: interventions stage has shown that the momented facilitated activity of *treating RCT participants* is construed by a temporal sequence of past tense enacted occurrences. Specifically, external 'time: successive' and 'consequence: means / purpose' connexions are used to sequence the figures functioning as the main intervention *steps*. The orbital configurations of the sequenced figures include (a) observers and (sometimes) observed people as facilitators; and (b) measured instrumental things and enacted activities as facilitatory entities. To add specificity, time entities are frequently used to locate and/or distribute occurrences. Concurrently, internal 'similarity: rework' connexions are used to elaborate on the main steps, while 'cosequence: justify' connexions are employed to interact with the readership by 'justifying' the investigators' decisions on the important aspects of trial interventions. To flag or inscribe '+valuation' of the performed treatments, 'justification' can be accompanied by other instances of heteroglossia, such as 'attribution' or 'endorsement'. Lastly, there are occasional references to additional study protocol documentation and external assessments of the observer entities with a view to suggesting scientific rigour and credibility. These instances, however, are not as attitudinally charged as the Intervention protocol or Standardisation stages, which are the focus of Sections 4.5.1 and 4.5.2.

4.3.4 The Record: outcome measurement stage

To allow for future trial replications, the CONSORT Statement (Checklist Item 6) calls for RCT reports to provide a list of "completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed" (Moher et al., 2010, pp. 3, 7). The CONSORT wording of this requirement indicates an interplay between the static and dynamic field perspectives on the itemised activity *outcome measurement*. On the one hand, defining and classifying *outcome measures* into primary and secondary implies the existence of taxonomic item relationships. On the other hand, including the "how" and "when" aspects of *outcome measurement* entails the construal of the momented facilitated activity.

To construe the complex field of *outcome measurement*, it was found that RCT report writers tend to introduce a list of linguistically *defined* observational activity and/or characteristic entities. This strategy is agnate to that of *defining* the *study* in Study design (see Section 4.2.1) or *defining* the *study participant/selection criteria* in Record: participant selection (see Section 4.3.1.3). Outcome *definitions* can be accompanied by a temporal sequence of the enacted occurrences, which is an instance of the facilitation strategy (i.e., *steps*) identified in all previously discussed Record stages.

As an illustration, this section starts with the analysis of the abridged Record: outcome measurement stage in BMJ-2's report on the effectiveness of adding mirtazapine to other medication in treating resistant depression (see Table 4.12).

Table 4.12: The abridged Record: outcome measurement stage in the methodology recount of BMJ-2.

Staging	Text (BMJ-2)
Record: outcome measurement	**Procedures**
steps	Participants were followed up at 6, 12, 24, and 52 weeks. To maximise response rates, follow-up assessments at 12, 24, and 52 weeks were conducted at a face-to-face appointment with a researcher. If this was not possible then questionnaires were posted or administered over the phone.
definitions (1º & 2º outcomes)	The primary outcome was BDI II [Back depression inventory, second revision] score at 12 weeks after randomisation, measured as a continuous variable. Secondary outcomes were: response, defined as at least a 50% reduction in BDI II score; remission, defined as a score of less than 10 on the BDI II; and anxiety measured with the generalised anxiety disorder (GAD-7)[16] assessment.

As shown in Table 4.12, the first paragraph recounts outcome measurement with reference to its assessment points using a temporal sequence of past tense enacted occurrence figures (the *steps* phase). In the second paragraph, however, outcome measurement is recounted by *defining* the primary and secondary outcomes (e.g., *BDI II score, response*).

4.3.4.1 Introducing the outcome measurement steps

Like the other Record stages, Record: outcome measurement uses external 'time: successive' and 'consequence: purpose/means' connexions to form a sequence of methodological *steps*. For instance, Figure 4.14 displays the CONNEXION analysis of the sequence realised in the opening paragraph of BMJ-2's Record: outcome measurement.
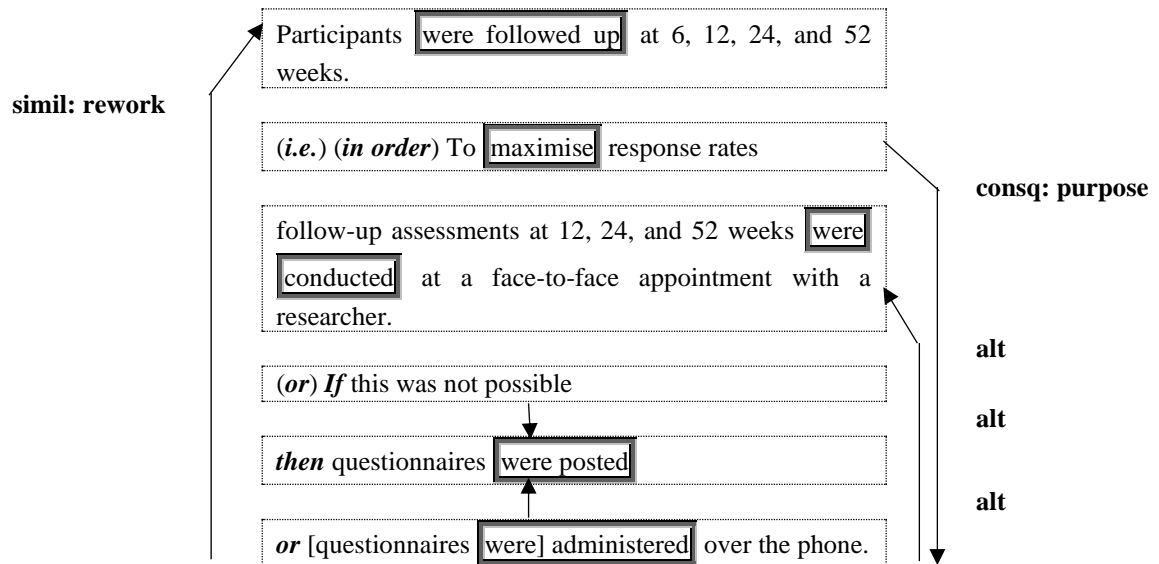
Figure 4.14: CONNEXION *analysis of the steps in BMJ-2's Record: outcome measurement.*

From "below", the facilitated activity *outcome measurement* is introduced through a hyperThematic situated occurrence figure (*followed up participants at 6, 12, 24, and 52 weeks*). As illustrated in Figure 4.14, this is followed by an elaborating sequence of enacted occurrences. Through the sequence, the writer details on three 'alternative' ways of *outcome measurement*, introducing the following facilitating entities: observer *researcher*, enacted activity entity *face-to-face appointment*, and instrumental thing *phone*. Furthermore, the resulting occurrence (*maximise*) intensifies the 'amount' of the observational activity *response*, which flags the reliability and representativeness of the *measured outcomes*. Therefore, the temporal sequence is expected to flag '+valuation' of *outcome measurement*.

In the narrowed dataset, temporal sequencing of the enacted figures (i.e., *steps*) was identified in six out of eight RCT reports. As is the case with other Record stages, the orbital configurations of the sequenced figures enable the writer to comment on the circumstances surrounding the outcome measurement and, more importantly, evaluate the facilitating entities. For instance, JAMA-2's writer describes the observer *evaluators* as *independent*, which flags their objectivity ('+veracity') by lowering their 'extent: proximity: space' relative to the trial. Similarly, the quality *trained* is used in NEJM-1/2 to inscribe '+capacity' of the observer *psychiatrists, psychologists,* and *clinician raters*. When it comes to the facilitatory entities, positive assessment can be accompanied by extra-vocalisation in an effort to indicate the "objectivity" of the attitudinal proposition (see (4.46)).

(4.46) Participants also completed online self report measures at these time points, a **method** that has been shown to be as **reliable** and as **valid** as written administration.[35,36] (BMJ-1)

In (4.46), for example, the qualities *reliable* and *valid* inscribe '+valuation' of the enacted activity entity *method*, while the position *has been shown* 'endorses' the referenced publication entities as external Appraisers ([35,36]). Ultimately, it is the joint evaluations of facilitator and

facilitatory entities that should position the reader to acknowledge the reliability of *outcome measurement*.

4.3.4.2 Defining the outcome measures

To construe a momented outcome measurement activity, it was found that the writers also use state figures that involve reconstrued activity entities. More precisely, they typically provide a record of specific *measurements* by *defining* the semiotic *outcome* being measured. This is illustrated in Table 4.13, which shows the orbital configurations of the figures that *define* BMJ-2's outcome measures.

Table 4.13: Defining BMJ-2's outcome measures through co-elaborated state figures.

figure centre		
characterised semiotic entity	**=**	**observational activity/characteristic entity**
the primary outcome	was	**BDI II [Back depression inventory, second revision] score** at 12 weeks after randomisation, measured as a continuous variable.
secondary outcomes	were	**response**, defined as at least a 50% reduction in BDI II score
		remission, defined as a score of less than 10 on the BDI II
		anxiety measured with the generalised anxiety disorder (GAD-7)[16] assessment.

In Table 4.13, the co-elaborations between the *primary/secondary outcomes* and the linguistically defined observational activity/characteristic entities simultaneously construe:

- the extending ('+') relations between the individual measurements (i.e., *We measured: BDD II score at 12 weeks,* [+] *response,* [+] *remission, and* [+] *anxiety*); and
- classificatory taxonomic relations among the individual outcomes (see Fig. 4.15).
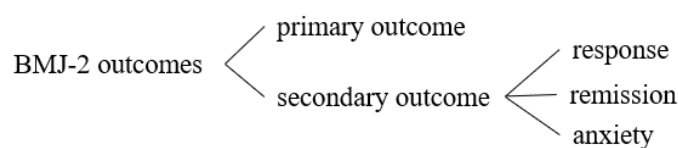
Figure 4.15: Classification taxonomy of BMJ-2's outcome measures.

The characterisation of *outcomes* as *primary* and *secondary* offers a sub-classification of the response variables depending on their "importance to relevant stakeholders" (Moher et al., 2010, p. 7). Then, the sub-classification of *primary* and *secondary outcomes* is used to provide details on individual outcome measurements. Therefore, the facilitated and/or regulated activity series are realised by the *definitions* of the reconstrued entities that express more delicate outcomes (e.g., *response*).

As shown in Table 4.13, the primary outcome in BMJ-2 is co-elaborated with the observational activity entity *BDD II score*, whose characterisation subsumes the meaning of the

instrumental thing *BDD II*. As marked in (4.47), the *score* is also qualified in terms of time through the embedded prepositional phrase.

> (4.47) BDI II score [at 12 weeks after randomisation], measured as a continuous variable

The qualifying phrase helps the reader situate *outcome measurement* and *randomisation* on the RCT timeline (*randomisation – 12 weeks – measurement*). In (4.47), the subsequent elaborating clause further specifies how the *score* was measured by co-elaborating the outcome with the characterised semiotic entity *continuous variable*. Eventually, (4.48) shows that the entire definition of the *primary outcome* can be unpacked at the field level using the facilitated activity series that moments *outcome measurement*.

> (4.48) 12 weeks after randomisation, participants **completed** the BDI-II survey
> ^
> the participants **scored** X points
> ^
> the score **was measured** as a continuous variable

Similar dynamic readings can be identified in the secondary outcome definitions of *anxiety*, *response*, and *remission* (see Table 4.13). As indicated in (4.49), the record of the anxiety measurement is provided through the embedded clause that qualifies the characteristic entity *anxiety*.

> (4.49) anxiety [[measured with the generalised anxiety disorder (GAD-7)[16] assessment]]

In (4.49), the embedded clause construes an instrumented enacted occurrence (*measure*) figure, with the enacted activity *GAD-7 assessment* as the facilitatory entity. Therefore, the *definition* of the *anxiety outcome* can also be unpacked through the facilitated activity series, as shown in (4.50).

> (4.50) the generalised anxiety disorder (GAD-7)[16] assessment **was used**
> ^
> the anxiety of the participants **was measured**

From an interpersonal perspective, the publication in (4.49-50), which accompanies the characterised enacted activity (*(GAD)[16]*), suggests that this facilitatory entity is established within the community, affording '+valuation'. This is further flagged through entity characterisation, which sharpens the *assessment's* 'valeur: specificity' so that it matches the object of measurement – *generalised anxiety disorder* (*GAD*). In addition to facilitation, the *definitions* of *remission* and *response outcomes* construe regulated activities by gauging the measured observational activity entity *BDI II score* (see Table 4.13 and Fig. 4.16).
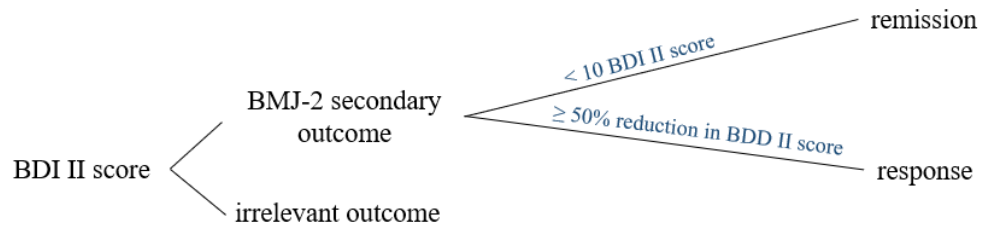
Figure 4.16: Construing regulated and facilitated activity series through classification.

As indicated in Figure 4.16, the observational activity entities *remission* and *response* have *BDI II score* as their hypernym. The characterisation of the *score* subsumes the meaning of the instrumental thing *BDI II survey*, which was used to facilitate the *remission* and *response secondary outcome measurements*. Furthermore, the measured dimension (i.e., *height*) of *BDI II scores* is specified to regulate the sub-classification of *BDI II scores* as *remission* (*<10*) or *response* (*≥50 reduction*). Therefore, had the writer not used reconstrued activity entities to *define remission* and *response*, the regulation of the activity *outcome measurement* would have been realised through a causal sequence (see (4.51)).

> (4.51) *If* ['consequence: condition'] the participants had responded to treatment or their depression symptoms had remitted , the assessors measured the results as secondary outcomes. *That is* ['similarity: rework'], *if* ['consequence: condition'] the BDD II score had reduced at least 50%, it was measured as a response. *If* ['consequence: condition'] the BDD score was less than 10, it was measured as a remission.

In the narrowed dataset, trial-specific definitions of primary and secondary outcome measures appear in all RCT reports, which makes the *definition* phase obligatory in Record: outcome measurement. This can be attributed to the two key affordances of this linguistic strategy. First, by using reconstrued activity entities to express facilitation, the writers can use characterisation and qualification to condense the information that is necessary for trial replications. Second, by gauging the properties of the reconstrued observational activities, the writers can construe regulated activities, suggesting a principled outcome measurement. Be that as it may, *definitions* might be limited when it comes to indicating the reliability of the performed assessments. Although references to external publications can afford '+valuation' of the facilitatory entities, the omission of the facilitator observers prevents the writer from evaluating their '+capacity/veracity'. This may be the reason why the majority of RCT reports in the narrowed dataset also include a phase outlining the outcome measurement *steps*. In addition, several RCT reports include the attitudinal Standardisation to further demonstrate the credibility of the performed measurements. This stage is discussed in Section 4.5.2.

4.3.4.3 Including additional outcome measurements

According to the CONSORT statement, all RCT trials must track the unintended outcomes of the intervention because "harms should always be viewed as important" (Moher et al., 2010, p. 7). Sometimes, the adverse effects are included in the list of pre-specified secondary outcomes. More often, however, the record of the primary and secondary outcome measurements is followed by a record of additional outcome measurements, which include adverse effects and outcomes not pre-specified as either primary or secondary outcomes (e.g., *post hoc* outcome measurements). As exemplified in (4.52), this record is usually realised through temporal sequences and/or instrumented enacted occurrence figures (i.e., facilitated activities at the field level).

> (4.52) The safety and tolerability of brexanolone ⎡were assessed⎤ ***by*** ['consequence: means'] ⎡recording⎤ and ⎡summarising⎤ adverse events, clinical laboratory measurements, vital signs, and ECGs (including changes from baseline). Emergent suicidal ideation and behaviours ⎡were assessed⎤ with the Columbia Suicide Severity Rating Scale;[40] patient-reported sedation or sleepiness ⎡was assessed⎤ with the Stanford Sleepiness Scale.[41] (LANCET-2)

Ultimately, a distinction between the primary/secondary and additional outcome measurements seems to stem from the fact that they prioritise the outcomes that reflect different evaluative dimensions of the intervention under investigation. More precisely, the former mainly focus on the intervention's effectiveness, while the latter predominantly deal with its safety.

4.3.5 The Record: statistical analysis stage

The CONSORT Statement (Checklist Item 12) expects all RCT reports to "specify which statistical procedure was used for each analysis (…) and to describe details of the statistical analysis such as intention-to-treat analysis (Moher et al., 2010, p. 13). Therefore, the Record: statistical analysis stage is primarily concerned with momenting the facilitated activity of *analysing statistical data*. Representing "a preferred analysis strategy" (Moher et al., 2010, p. 17), the intention-to-treat analysis can be perceived as medical axi-tech, which can afford '+valuation' of the trial.[47]

Like in the other Record stages, the facilitated activity series was found to be realised by temporal sequences of past tense enacted occurrences (i.e., *steps*). To establish a foundation

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[47] Intention-to-treat analysis entails an evaluation of all participants according to their initial group allocation, regardless of whether they completed/adhered to the treatment or changed treatment groups (www.nice.org.uk). According to the CONSORT treatment, the inclusion of all participants is able to maintain an unbiased nature of RCTs.

for exploring the linguistic features of Record: statistical analysis, this section uses the stage realisation in BMJ-1's methodology recount (see Figs. 4.17 and 4.18).

simil: rework

consq: justify

Analyses were performed

consq: means

by using an intention-to-treat method in which participants were analysed in the group to which they had been randomised.

(**i.e.**) Missing data were deemed to be missing at random

consq: means

by using Little's missing completely at random test.

time: succ

(*then*) Linear mixed models with maximum likelihood estimations were used

consq: purpose

(*in order*) *to* evaluate the effect of treatment group on the different outcomes.

(*because*) Such models take into account the differences in rate of change and differences in trajectories of change between individuals with repeated responses

add

and use all the available data for each participant.[43]

add

(....)

We (*also*) used χ2 tests for categorical data and independent *t* tests

consq: purpose

for assessing differences between groups

time: simul

when time was not a factor on the outcome variable.

time: succ

(*then*) We carried out *post hoc* analysis of participants in the supportive therapy arm who later crossed over to BDD-NET after the six month follow-up

consq: means

(*by*) using paired *t* tests.

time: succ

(*then*) Effect sizes within and between groups were calculated as Cohen's d [values].

All statistical analyses were done in STATA 13.1.

Figure 4.17: CONNEXION analysis of the steps in BMJ-1's Record: statistical analysis (with marked unpacked metaphors).

As illustrated in Figure 4.17, BMJ-1's Record opens with a sequence of two occurrences linked via 'consequence: means' (…*were performed by using*…), which introduces *an intention-to-to-treat method* as the facilitatory enacted activity entity. The characterisation of the *method* as *intention-to treat* carries both textual and interpersonal implications. As it

subsumes a specific set of analytic steps, it makes the sequence the hyperTheme. Interpersonally, this affords a dominating positive prosody of the performed *statistical analysis* due to the perceived objectivity and reliability of the intention-to-treat method.

The hyperThematic sequence is elaborated by another temporal sequence of enacted occurrences (see Fig. 4.17). It should be noted, however, that the sequence incorporates two instances of augmented state figures (see (4.53-54)).

(4.53) Missing data were deemed to be missing [data] at random.

(4.54) Effect sizes within and between groups were calculated as Cohen's d.

In the co-text, the position *were deemed* (4.53) and the instigation *were calculated* (4.54) express the enacted occurrences (i.e., *steps*), while the characteristics *missing at random* (4.53) and *Cohen's d* (4.54) elaborate the semiotic entities *data* and *effect sizes*. From "below", the figure augmentations are realised through mental (*were deemed*) and behavioural (*were calculated*) processes, while the characteristics are realised through Role circumstances.

Furthermore, Figure 4.17 shows that one of the sequenced steps (i.e., *using linear mixed models with maximum likelihood*) enters an internal 'consequence: justify' connexion with two present tense figures focusing on the facilitatory entity. As indicated in (4.55), the justifying figures are aimed at engaging the readership through a combination of several evaluative resources.

(4.55) … (because) Such models take into account the differences in rate of change and differences in trajectories of change between individuals with repeated responses and use all **the available data** for each **participant**.[43]

In (4.55), the connexion itself provides a heteroglossic 'justification' for choosing the enacted activity entity *linear mixed models with maximum likelihood estimations*. Its '+valuation' is flagged by maximising the 'amounts' of the semiotic *data* (*all*) and the observed people *participants* (*each*), which reaffirms its status as *an intention-to-treat model*. Finally, the inclusion of the external publication ([43]) 'reinforces' the 'assertions' appraising the model, positioning the evaluation as relatively objective.

In the orbital configurations of the sequenced figures, a distinction can be made between the entities that represent the objects of analysis and those that facilitate it (see Fig. 4.17). The former category includes the semiotic results such as *data*, *effect*, *outcomes*, *factor*, and *variable*. To provide more specific details on what was measured, these entities are typically characterised (e.g., *missing/categorical data*) and/or qualified (e.g., *the effect of treatment group on the different outcomes*). The latter category consists of the enacted activities such as *test*, *model*, and *analysis*, the instrumental thing *STATA 13.1*, and the observer *statisticians*. When it comes to the enacted activities and instrumental things, characterisation and/or qualification are invariably employed to offer specifics on how the statistical analysis was

facilitated (e.g., _Linear mixed models with maximum likelihood estimations_). The characterisation of these facilitatory entities serves as another implicit interpersonal resource. Specifically, they sharpen the entities' 'valeur: specificity' (e.g., _Little's missing completely at random / χ2 / t test_), which in turn flags their '+valuation' as already established in the medical community. By contrast, the observers tend to be construed pronominally or implicitly. Like in Record: randomisation&masking, this appears to downplay the role of human agency, emphasising the 'non-human' facilitation (e.g., _such models use…_) and flagging the reliability of the facilitated _statistical analysis_ ('+valuation').

Within the narrowed dataset, it was found that the writers tend to elaborate on what their statistical model entailed to convince the readership of its "intention-to-treat" nature. At the discourse semantic level, this is realised by adding an elaborating temporal sequence of past tense enacted occurrences (i.e., _sub-steps_). To illustrate this strategy, it is now useful to present the CONNEXION analysis of the figures elaborating the _linear mixed models_ used in the BMJ-1 statistical analysis (Figure 4.18).
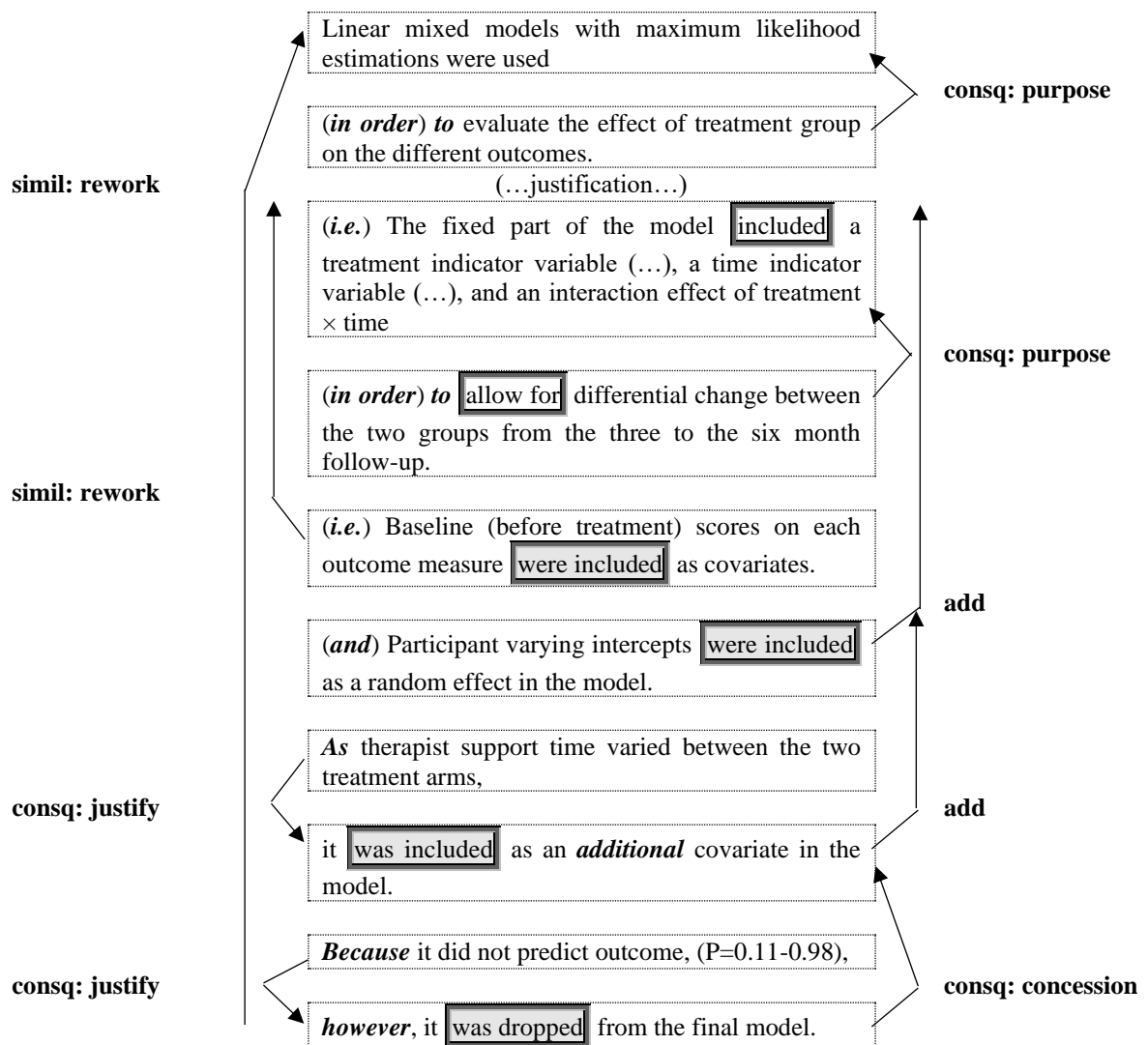
Figure 4.18: CONNEXION analysis of the second step in BMJ-1's Record: statistical analysis (with marked figure instigation).

As indicated in Figure 4.18, the majority of the *sub-steps* are realised through instigated state figures. As is the case with the augmented figures in Figure 4.17, the figure instigations *include* and *drop* represent analytical *sub-steps*, construing a dynamic field perspective. The inclusion of instigation enables the writer to elaborate on the reasoning behind *including/dropping* certain parts of the model. In Figure 4.18, for instance, there are two internal 'consequence: justify' (*as, because*) connexions, which introduce the occurrences that resulted in the investigators' decisions to *include* and then *drop* the *therapist support time* as a *covariate*. Interpersonally, the use of heteroglossic 'justification' is oriented towards negotiating the value of the *model*. In addition to disclosing the analytic *sub-steps*, the instigated figures contain entity co-elaboration, which construes a static field perspective by building the taxonomies pertinent to the *model* (e.g., *participant varying intercepts* → type → *random effect in the model*). This provides a detailed description of the intervention features that were captured by the analysis, allowing future trial replications.

The temporal sequences of analytic steps were found to be prototypical of all the stage realisations in the narrowed dataset. Furthermore, six out of eight Records contain one or more phases saturating a positive prosody of the enacted activity entity *statistical analysis*. To indicate scientific rigour, for instance, BMJ-2's writer has opted to include an external evaluation of the semiotic idea *statistical plan* (4.56).

> (4.56) **Analysis** and **reporting** were in line with CONSORT[21] guidelines based on a prespecified **statistical analysis plan approved** by the trial steering committee.[22] (BMJ-2)

In (4.56) '+valuation' of *analysis* and *reporting* is first afforded by stating their adherence to the semiotic locution *CONSORT guidelines*. Moreover, the occurrence *approved* is used to inscribe '+valuation' of the *statistical analysis plan*, with the institution entity *trial steering committee* as Appraiser. Finally, the BMJ-2 readership is referred to another publication (*[22]*) for accessing the actual *plan*. Another representative example can be found in (4.57), which refers the reader to the semiotic locution *appendix* and the online publication *clinicaltrials.gov* for an up-scaled 'amount' of *details*, which flags rigour as well as transparency.

> (4.57) Additional **details of the statistical analysis plan and statistical methods** are provided in the appendix. (…) This study is registered with ClinicalTrials.gov, number NCT02614547. (LANCET-2)

The comments in the Record: statistical analysis stages are aimed at convincing the medical discourse community of the reliability of statistical analysis. However, like the comments identified in Study design or Record: interventions, they suggest rather than demonstrate scientific rigour and credibility because the readership would still need to look at the other documents to examine the statistical plans themselves. Therefore, to further demonstrate the

internal validity of the analysis, all Record: statistical analysis stages are preceded by an attitudinal Power calculation stage (see Section 4.5.3).

4.4 Demonstrating the ethics, rigour, and credibility of the study

Rather than moment the facilitated activity *RCT*, attitudinal components wish to demonstrate that the item *RCT (report)* is ethical, scientifically rigorous, and/or credible. As such, they focus on the axiology of conducting and reporting an RCT, with puts interpersonal meanings at stake. As mentioned in Section 4.1, the preliminary analysis of methodology recounts functioning as Methods identified two stages that are construed by attitudinal components – Compliance (Section 4.4.1) and External involvement (Section 4.4.2).

At the discourse semantic level, it was found that attitudinal components utilise a wide range of APPRAISAL resources to target observers and enacted activity entities. Compared to the epistemological components discussed in Section 4.3, the role of external CONNEXION in attitudinal components seems to be minor. Although occurrence figures tend to be more prevalent than state figures, they are often interlinked via explicit or implicit 'addition' (*and*). All instances of temporal sequences are highly localised and aimed at assigning a positive quality or characteristic to the reconstrued enacted activities (e.g., *RCT, analysis)* or related semiotic locutions/ideas (e.g., *RCT report, statistical analysis plan*). The aforementioned discourse semantic features are in accordance with the preliminary findings on attitudinal components, which suggested a static field perspective on RCT (reporting) and a focus on communal values (i.e., tenor).

4.4.1 The Compliance stage

In JAMA-1/2, the embedded methodology recounts start with the Compliance stage. As revealed in the preliminary analysis (see Section 4.1), this stage is concerned with the documents and assurances that demonstrate the study's compliance with the RCT standards for treatment evaluation and reporting. Thus, its purpose is to foreground a dominating positive prosody of the methodology adopted by the reported RCT. Textually, Compliance can be observed as a "marked macroThematic" choice because it precedes the sub-section introducing the study design.

In Section 4.1, JAMA-1's Compliance was introduced as a representative example. This section advances the investigation of this stage by interpreting its discourse semantic features (see Table 4.14).

Table 4.14: Compliance stage in the embedded methodology recount functioning as Method in JAMA-1.

Staging	Text (JAMA-1)
Compliance *comments*	**Method** The Veterans Affairs (VA) Office of Research and Development and VA Central Institutional Review Board ⟨approved⟩ the study, the National Institutes of Health ⟨provided⟩ a certificate of confidentiality, the VA Central Institutional Review Board ⟨conducted⟩ annual continuing review, and a data and safety monitoring committee ⟨reviewed⟩ the study biannually. All patients ⟨provided⟩ written informed consent and privacy authorization [statements]. The full study protocol ⟨can be found⟩ in Supplement 1.

As shown in Table 4.14, JAMA-1's Compliance comprises a list of five occurrence figures, which is followed by a co-elaborative state figure. While the occurrences focus on demonstrating a strong community consensus regarding the trial's positive evaluation, the final co-elaboration is aimed at indicating the report's transparency.

To saturate a positive prosody of the enacted activity entity *study,* all five occurrence figures employ external Appraisers. To begin with, the occurrence *approved* inscribes '+valuation' of *the study*, with the institutions *VA Office of Research and Development* and *VA Central Institutional Review Board* as Appraisers (see (4.58))

(4.58) The Veterans Affairs (VA) **Office** of Research and Development and VA Central Institutional Review **Board approved** the **study**

As indicated in (4.58), characterisation (*VA / VA Central Institutional Review*) and qualification (*Research and Development*) are employed to flag the Appraisers' competent authority by sharpening their 'valeur: specificity'. In the second figure, the semiotic locution *a certificate of confidentiality* furthers the *study*'s '+valuation' (see (4.59)).

(4.59) the National **Institutes** of Health provided a certificate of **confidentiality**

In (4.59), characterisation (*National*) and qualification (*Health*) of the *Institutes* up-scale the Appraiser's 'extent: distribution: space' and 'valeur: specificity', also flagging their high community standing. To emphasise the rigour involved in *the study*'s '+valuation', the following two figures rely on the activity *review*, which expresses an inherently 'intensified occurrence' in the scientific discourse (see (4.60-61)).

(4.60) the VA Central Institutional Review **Board** conducted annual continuing **review**

(4.61) a data and **safety** monitoring **committee reviewed** the **study** biannually

In (4.60), *review* is realised as an enacted activity entity, with the previously introduced *VA Central Institutional Review Board* as the perpetrating entity. The same figure also amplifies the *review*'s 'extent: distribution: time' (*annual continuous*), which implies consistency in the

study's '+valuation'. Then, (4.61) realises *review* as an enacted occurrence facilitated by the institution entity *data and safety monitoring committee*, whose characterisation serves to indicate the *trial's safety*. Finally, the fifth figure maximises the 'amount' of the observed people (*all*) who had agreed to *the study*'s terms and conditions prior to their participation, which flags the investigators' ethical behaviour (see (4.62)).

> (4.62) <u>All</u> **patients** provided written informed consent and privacy authorization [statements].

Although (4.58-62) involve external Appraisers, it is important to acknowledge the monoglossic nature of these attitudinal propositions. Typically, a heteroglossic 'attribution' of *the study*'s '+valuation' entails the use of a positioned state figure, as illustrated in Table 4.15.

Table 4.15: Introducing external Appraisers via positioned state figures (with marked ATTITUDE and ENGAGEMENT analyses).

			nucleus		
			centre		
discourse semantics	position >		figure		
			entity	+ quality	
	Institution X	*officially declared / certified*	*the study*	*is*	*scientifically sound / confidential*
lexico-grammar	Med/Sayer	P: verbal	Medium/Carrier	P: attributive	Rg/Attribute
	n. gr	v. gr.	nominal group	v. gr.	adj. gr.

However, JAMA-1's writer opts for non-positioned figure configurations, which use evaluative perpetrated/domained occurrences (*approve/review*) or semiotic locutions (*certificate, statement*) to construe extra-vocalised assessments through monogloss (see Table 4.16).

Table 4.16: Introducing the external Appraisers of inscribed '+valuation' via occurrence figures in JAMA-1 Compliance.

	inner orbit			
	nucleus			
	centre			
discourse semantics	occurrence	=+entity (Domain)	+entity	+x entity (Perpetrator)
(4.58)	*approved*		*the study*	*VA Office of Research and Development; VA Central Institutional Review Board*
(4.59)	*provided*		*a certificate of confidentiality*	*the National Institutes of Health*
(4.61)	*reviewed biannually*	*the study*	*a data and safety monitoring committee*	
Lexico-grammar	Process: verbal (4.58) / material (4.59) / behavioural (4.61)	Range	Medium	Agent
	verbal group	n. gr.	n. gr.	nominal group

The choice to replace figure positioning with evaluative occurrences or semiotic locutions carries significant implications for engaging the readership. On the one hand, introducing the external Appraisers as position sources would have opened a dialogic space for negotiating whether the enacted activity *study* should be related to the qualities of *being scientifically sound*, *confidential*, or *safe*. For instance, writing that *the National Institutes of health* certified that *the study* is *confidential* (see Table 4.15) would have acknowledged the possibility of an opposing position, which doubts *the study's confidentiality*. On the other hand, the occurrences such as *approve* or semiotic locutions such as *a certificate of confidentiality* allow the writer to externalise *the study*'s '+valuation' through 'assertions'. Put simply, the reader is not expected to dispute the facts that the study obtained institutional approval and certification. Therefore, a monoglossic 'assertion' is used instead of an explicit 'attribution' to demonstrate rather than negotiate the community consensus about the *study*'s '+valuation'.

In the final *comment* in JAMA-1's Compliance, a state figure is used to flag '+valuation' of the semiotic locution *RCT report* (see (4.63)).

(4.63) The <u>full</u> **study protocol** can be found in Supplement 1.

In (4.63), the co-elaboration *can be found* sets up a compositional taxonomy between the *study protocol* and the semiotic locution *Supplement 1*. Interpersonally, the maximisation of 'amount' in <u>full</u> *study protocol* flags the investigators' transparency in reporting the JAMA-1 trial.

Based on the analysis presented in this section, it can be concluded that a Compliance stage wishes to demonstrate the ethics, scientific rigour, and credibility of the conducted study by highlighting institutional assurances. To achieve this goal linguistically, the writer targets the enacted activity *RCT* and its semiotic locution *report* with both inscribed (e.g., *confidentiality*) and flagged (e.g., *the <u>full</u> study protocol*) '+valuation'. The *RCT* assessments are pushed outside the domain of subjectivity by introducing institutions as external Appraisers. Specifically, semiotic locutions and evaluative perpetrated/domained occurrences such as *approve* or *review* are employed to present *the study*'s '+valuation' as an unbiased and already established fact.

4.4.2 The External involvement stage

Nearly half of the methodology recounts (including BMJ-1/2 and LANCET-1/2 in the narrowed dataset) accompany the Record stages with the External involvement stage. External involvement is used to disclose the extent and nature of the contributions made by the trial's stake holders (i.e., participants, service users, and funding sources). It is argued that the stage's main goal is to disclose information that will demonstrate the study's ethics and credibility.

To outline external involvement, the discourse semantic analysis revealed that the writers use a variety of figure types, which are predominantly linked by 'addition' (*and*)

connexions. The orbital figure configurations focus on the involvement of trial-external observers, observed people, and institutions in the reconstrued enacted activities and trial-related semiotic locutions. To specify the quantitative and qualitative aspects of external involvement, the aforementioned entities are often graduated with reference to 'amount', 'extent: distribution: space', and/or 'valeur: specificity'.

To illustrate the discourse semantic features of External involvement, this section begins with the analysis of the stage realisation in BMJ-2's report on the effectiveness of mirtazapine in treating resistant depression in primary care (see Table 4.17).

Table 4.17: External involvement stage in the embedded methodology recount genre functioning as Method in BMJ-2 (with marked underlined grammatical metaphors).

Staging	Text (BMJ-2)
External involvement *comments & contributions*	Patient and public involvement Patient and service user groups from Bristol and Manchester (PRIMER [Primary Care Research in Manchester Engagement Resource]) were involved [as facilitators] in developing the full application and commented on the plain English summary. All of them said that they recognised that the trial is valuable and offered advice about recruitment strategies. The Research Materials Advisory Service of the West Hub Mental Health Research Network (now Clinical Research Network) worked with the trial team to develop patient information materials and consent forms. A panel of service users reviewed the study documents before they were sent for ethical approval. A patient representative sat on the trial steering committee. A patient group met regularly to contribute to the nested qualitative study. This group advised on topic guides, contributed to analysis of the qualitative datasets, and advised on dissemination activities.

As can be seen in Table 4.17, the stage focuses on the enacted perpetrated/domained occurrence figures that indicate some kind of external input. In these figures, agency is assigned to the trial-external observers (*patient and service user groups from Bristol and Manchester (PRIMER)*) and institutions (*The Research Materials Advisory Service of the West Hub Mental Health Research Network*).[48] As far as the occurrences are concerned, a distinction can be made between those that indicate:

- assessment (*comment, recognise, advise, review*; cf. evaluative 'occurrences' identified in Section 4.4.1); or
- contributions (*develop*, *contribute*).

The qualification and characterisation of the *patient and service user groups* graduate their 'extent: distribution: space' and 'valeur: specificity' in a manner that coincides with the BMJ-2 locations (*Bristol and Manchester*) and BMJ-2 field of study (*primary care research*).

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[48] In this case, *patient and service user groups* are perceived as external observers because they are not included as trial participants (i.e., observed people). The PRIMER (Primary Care Research in Manchester Engagement Resource) "is a diverse group of patients, carers and members of the public with an interest in primary care research (…) [providing] a patient and public involvement and engagement (PPIE) resource for researchers." (https://sites.manchester.ac.uk/primer/).

This places the *groups* among the key stake holders of BMJ-2 research, which flags the validity and ethics of including their insights.

To begin with, *patient and service user groups* are frequently introduced as external Appraisers of enacted activity entities or related semiotic locutions. Specifically, they are the source of the only heteroglossic 'attribution', which inscribes '+valuation' of the enacted activity *trial* (see (4.64)).

(4.64) All of **them** said that they recognised that the **trial** is **valuable**

In (4.64), the maximised 'amount' of the observers (*all of them*) as external Appraisers further validates the positive assessment of *the trial*. Additionally, the observer *patients/service users* are given agency in several evaluative occurrences, including *commented*, *reviewed*, and *advised*.

Furthermore, *the patient/service user groups* are given agency in the occurrences that contributed to the completion of: (a) the semiotic locution *full application*; and (b) the enacted activities *trial* and *nested qualitative study* (i.e., *analysis of qualitative datasets*). When it comes to *the nested qualitative study*, the *contributions* of the *patient group* are realised through their perpetrator status in the relevant occurrence figures (see (4.65)).

(4.65) A patient group met **regularly** to contribute to the nested qualitative **study**.
This group… contributed to analysis of the qualitative **datasets**…

In the other two cases, however, their agency is construed implicitly through entity co-elaboration (see (4.66-67)).

(4.66) Patients and service user groups… were involved [as facilitators] [[in developing the full **application**]]

(4.67) A **patient representative** sat on the trial steering committee

In (4.66), the instigation *were involved* denotes the investigators' decision to include *patient and user groups* among the facilitators. Furthermore, the embedded non-finite clause is used to specify the *contribution* (*developed the full application*). In (4.67), the co-elaboration *sat* identifies *a patient representative* as a part of the institution *trial steering committee*, whose characterisation subsumes an agentive role in *steering a trial.* As marked in (4.65-67), the quantity of the *patients'/service users' contributions* is graduated in terms of 'intensified modality' (*regularly* in (4.65)) and 'amount' (*full* in (4.66); *a* in (4.67)). In (4.65), the characterisation of the facilitated *analysis* as *qualitative* should also position the reader to recognise the quality of the *group*'s *contributions*. More precisely, since *qualitative analysis* involves the interpretation of the participants' textual responses, the input provided by the people with the same health issues is likely to be perceived as beneficial.

As already mentioned, the institution *The Research Materials Advisory Service of the West Hub Mental Health Research Network* represents another important *contributor* to the BMJ-2 trial (see (4.68)).

> (4.68) The Research Materials Advisory Service of the West Hub Mental Health Research **Network**… worked with the trial team to develop patient information materials and consent forms.

In (4.68), the graduation of the *Network* with reference to 'extent: distribution: space' and 'valeur: specificity' also matches the BMJ-2 locations (*the West Hub*) and BMJ-2 field of study (*mental health research*), indicating a competent authority.[49] Additionally, its characterisation subsumes the meaning of the enacted activity *research materials advisory service*, which advances its '+capacity' as a facilitator. Therefore, it is argued that the writer has chosen to disclose the *Network*'s agency in (4.68) to flag '+valuation' of two trial-related semiotic locutions – *patient information materials* and *consent forms*.

Whereas (4.64-68) aim to ascertain the quality and quantity of external *comments* and *contributions*, the analysis of the narrowed dataset also identified several instances in which the involvement of the observed people and funding entities is negated (see (4.69-70).

> (4.69) No **patients** were involved [as facilitators] in setting the research question or the outcome measures, nor were they involved in developing plans for recruitment, design, or implementation of the study. No **patients** were asked to advise on interpretation or writing up of results. (BMJ-1)
>
> (4.70) The funder of the study had no **role** in study design, data collection, data analysis, data interpretation, or writing of the report. (LANCET-1)

In (4.69), figure instigation (*were involved*) and positioning (*were asked*) are used to introduce the investigators' decisions regarding the participation of the observed people *patients* as facilitators in the enacted activities (e.g., *outcome measures*) or trial-related semiotic locutions entities (e.g., *the research question*).[50] Simultaneously, the use of *no*, which minimises the 'amount' of patients, serves to 'deny' their involvement. Similarly, (4.70) 'denies' the involvement of the *funder of the study* by minimising the 'amount' of the semiotic *role*. As the inclusion of either observed people or funding entities as decision-makers could have resulted in a conflict of interest, the use of heteroglossic 'denial' in both examples appears to be aimed at refuting possible concerns over the ethics and/or credibility of the study.

In summary, External involvement wishes to demonstrate the ethics and credibility of *the study* by specifying the quantity and quality of external involvement. To achieve this goal,

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[49] The Mental Health Research Network is part of the National Institute for Health Research. The West Hub subsection of the Network covers the areas of Gloucester, Bristol, Avon and Wiltshire, Cornwall, Devon, Somerset, Dorset, Hampshire. (https://www.invo.org.uk/communities/invodirect-org/mental-health-research-network-west-hub/).

[50] In this case, *patients* represent *trial participants*, which is why they are treated as the observed people entity.

this section has identified two strategies, both focusing on the sources of agency in developing or evaluating the enacted activities and/or trial-related semiotic locutions (i.e., *comments* and *contributions*). In one strategy, the 'amount', 'extent: distribution: space' and/or 'valeur: specificity' of the external facilitator entities are graduated to flag the importance of incorporating the input of knowledgeable stake holders. Alternatively, the writers can use 'denial' to highlight the exclusion of potentially biased observed people and funding entities.

4.5 Zooming in on individual Record stages through multilayered genre embedding

So far, this chapter has focused on the embedded methodology recount genre functioning as the RCT report Methods stage. In other words, the generic staging explored in Sections 4.1 – 4.4 was concerned with recounting RCT methodology as a whole. A further investigation of the narrowed dataset, however, revealed additional layers of genre embedding as a means for "zooming in" on a specific part of the RCT workflow (e.g., interventions or statistical analysis). To illustrate a multilayered genre embedding, this section provides an overview of the generic structure identified in the Methods stage of JAMA-2's report on non-pharmacologic PTSD treatments (see Fig. 4.19).
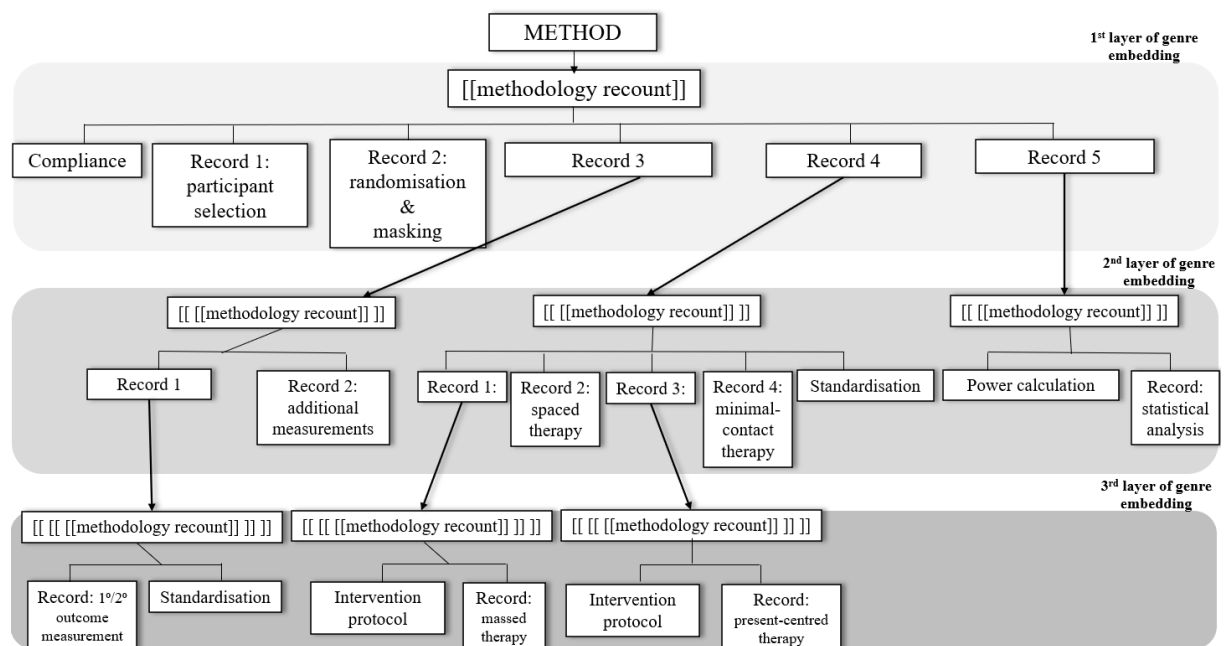
Figure 4.19: Multilayered genre embedding in JAMA-2's Methods.

As shown in Figure 4.19, JAMA-2's Methods stage is realised by an embedded methodology recount, which consists of the Compliance stage followed by five Record stages. Compliance is construed by an attitudinal component that focuses on the institutional approvals, the participants' informed consent, and the study protocol availability. Its purpose is to demonstrate the ethics, scientific rigour, and credibility of the itemised activity *trial*. Then, the Records elaborate a series of itemised facilitated activities that moment *the trial*: *participant*

selection, *randomisation and masking*, *outcome measurement*, *interventions*, and *statistical analysis*. While the first two Records are realised by the relevant epistemological components, the writer has chosen to supplant the 'outcome measurement', 'interventions', and 'statistical analysis' components with a second layer of embedded methodology recounts to provide additional stage-specific information.

The embedded methodology recount replacing the 'outcome measurement' component consists of two Record stages (see Fig. 4.20). The initial stage focuses on outcome measures that test the effectiveness of the interventions (i.e., *PTSD severity* as *1º/2º outcomes*), while the subsequent stage details on the outcome measures gauging the interventions' safety (i.e., *adverse effects* as *additional outcome measurements*).
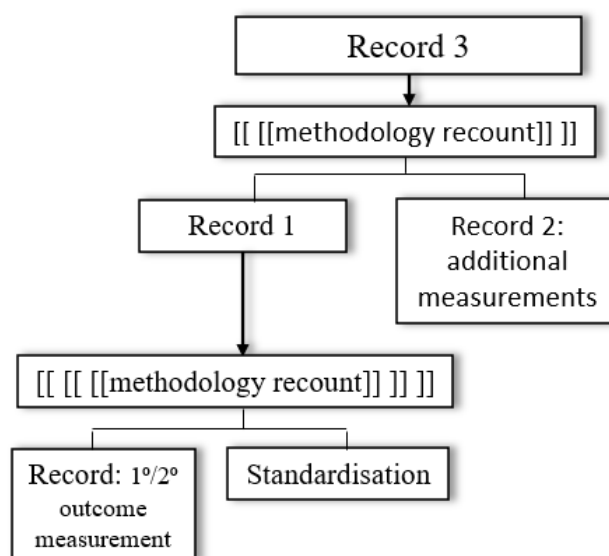
Figure 4.20: The internal generic structure of the Record 3 stage in JAMA-2's methodology recount.

As illustrated in Figure 4.20, a third layer of genre embedding is used to further zoom in on the itemised activities of *1º/2º outcome measurement*. In this methodology recount, the Record: 1º/2º outcome measurement stage is followed by the Standardisation stage, which is construed by an attitudinal component. Its purpose is to provide information on the standardised assessment tools and interrater reliability tests to demonstrate the credibility of the performed measurements.

In the embedded methodology recount supplanting the 'interventions' component, there are four Record stages preceding the Standardisation stage (see Fig. 4.21).
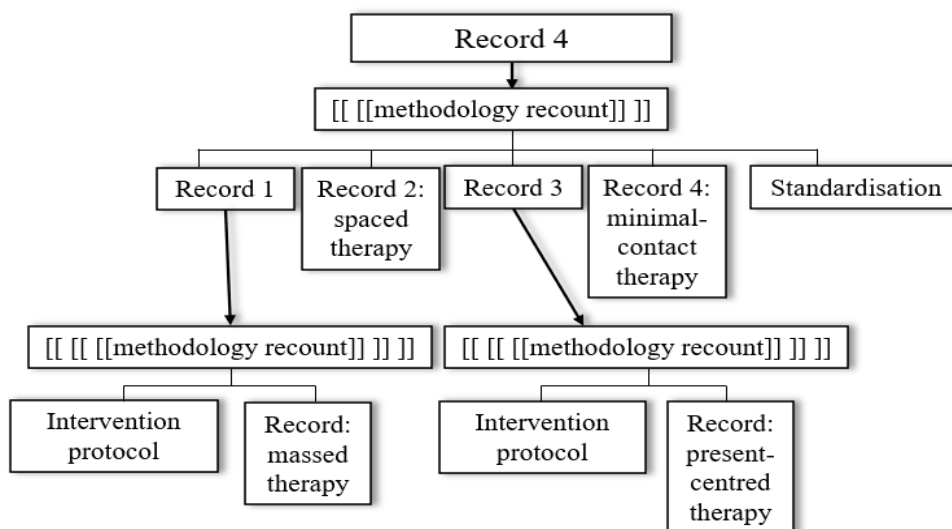
Figure 4.21: The internal generic structure of the Record 4 stage in JAMA-2's methodology recount.

In Figure 4.21, the Record stages expand on the itemised facilitated activities performed as a part of JAMA-2's interventions: *massed (prolonged exposure) therapy*, *spaced (prolonged exposure) therapy*, *present-centred therapy*, and *minimal contact therapy*. The final Standardisation stage covers the issues of therapist training and supervision so as to demonstrate the credibility of the performed interventions. Figure 4.21 also shows that JAMA-2's writer continues zooming in on *the massed* and *present-centred therapies* by adding a third layer of embedded methodology recounts. In both cases, the Record is prefaced by the Intervention protocol stage, which is realised by the orientational component that demonstrates scientific rigour by defining and contextualising the underlying scientific principles.

Finally, the embedded methodology recount supplanting the 'statistical analysis' component introduces the Power calculation stage before providing a Record that moments the itemised facilitated activity *statistical analysis* (see Fig. 4.22).
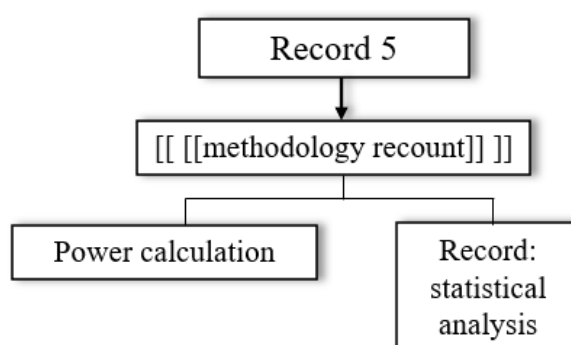
Figure 4.22: The internal generic structure of the Record 5 stage in JAMA-2's methodology recount.

Realised by an attitudinal component, the opening Power calculation emphasises the scientific rigour used in determining the sample size to ensure the credibility of statistical data.

Due to its complexity, the generic structure of JAMA-2's Methods can be perceived as more comprehensive than most other Methods within the narrowed dataset (see Section 4.6).

Its realisation contains all the stages identified in the embedded methodology recounts that function as Record stages. Therefore, it is now possible to update the system network of generic components and make a comparison between the options according to the level of genre embedding (see Fig. 4.23).
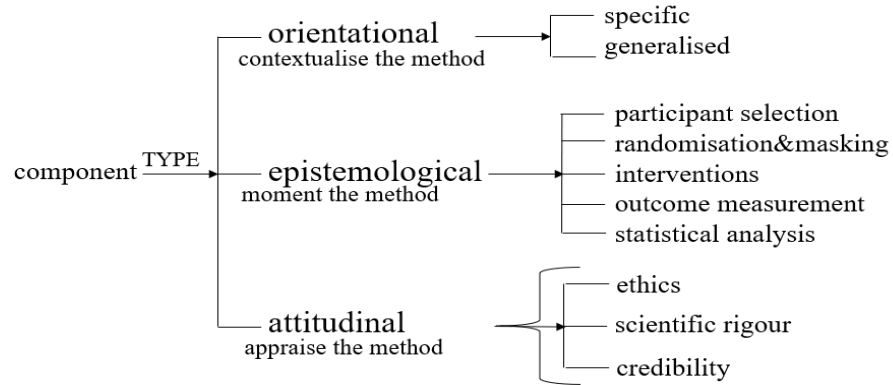
Figure 4.23: Generic component types realising stages in methodology recounts.

As illustrated in Figure 4.23, all methodology recounts comprise stages that are construed by orientational, epistemological, or attitudinal generic components. While the methodology recounts functioning as RCT report Methods deal with the itemised activity *study*, those that function as Record stages focus on a facilitated activity that moments the *study* (e.g., *participant selection*). This means that the level of genre embedding carries important implications for the choice of more delicate component options.

To contextualise the study, the first layer of embedded methodology recounts can use a specific orientational component, which functions as Study design. As illustrated in (4.71), this stage identifies the trial as an RCT and provides a study-specific definition, which summarises the study design.

> (4.71) VAST-D study was a multisite randomized, single-blind, parallel-assignment trial including US Veterans Health Administration (VHA) patients whose condition was unresponsive to at least 1 course of antidepressant treatment. (JAMA-1 Study design)

On the contrary, lower-level methodology recounts supplanting 'intervention' components can employ a generalised orientational component to serve as the Intervention protocol stage. The goal of this stage is to outline the general scientific principles underpinning the treatments, as in (4.72).

> (4.72) Prolonged exposure therapy[22] is a manualized cognitive behavioral therapy consisting of imaginal exposure… followed by processing thoughts and feelings related to the imaginal experience; in-vivo exposure…, psychoeducation about PTSD, and controlled breathing training. (JAMA-2 Intervention protocol)

To moment the entire study, the first layer of embedded methodology recounts includes multiple Record stages that can be construed by any 'epistemological' component subtype:

'participant selection, 'randomisation&masking', 'interventions', 'outcome measurement', and 'statistical analysis'. On the other hand, the epistemological component subtype functioning as the Record stage in a lower-level embedded methodology recount is prescribed by the type of the component they replace in a higher-level genre. For example, a methodology recount supplanting an intervention generic component can only contain intervention components (see Fig. 4.24).
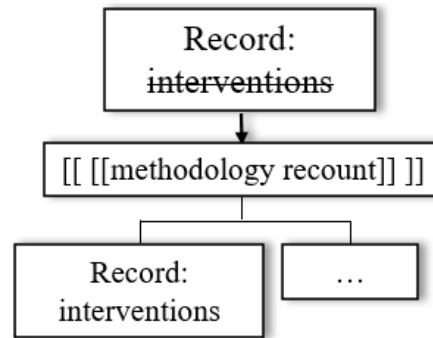
Figure 4.24: A lower-level embedded methodology recount supplanting an intervention component.

To appraise the study in its entirety, the first layer of embedded methodology recounts can include attitudinal components that function as Compliance and/or External involvement. However, in lower-level embedded methodology recounts, the attitudinal components functioning as Standardisation or Power calculation are concerned with appraising the epistemological component they accompany. For instance, writers can use Power calculation stage to demonstrate scientific rigour and credibility of the facilitated statistical analysis (see Fig. 4.25).
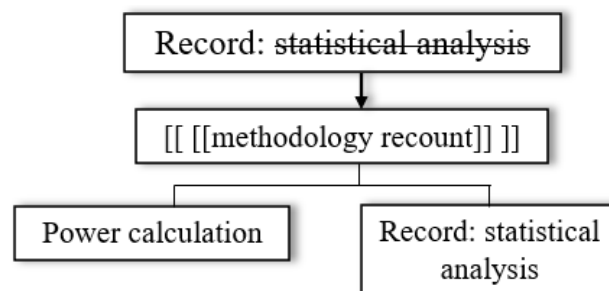
Figure 4.25: A lower-level embedded methodology recount supplanting a statistical analysis component.

Sections 4.2 – 4.4 showcased the in-depth analysis of the discourse semantic features of Record, Study design, Compliance, and External involvement stages, which were identified in the first layer of genre embedding. The following sections explore the discourse semantic features of Intervention protocol (Section 4.5.1), Standardisation (Section 4.5.2), and Power calculation (Section 4.5.3).

4.5.1 The Intervention protocol stage

To ensure quality of RCT trials, the CONSORT Statement requires that all RCT investigators prepare a protocol "that specifies in great detail how the trial will be conducted" (Moher et al., 2010, p. 5). In other words, study protocols are used to define and contextualise the principles underpinning the itemised activity *RCT*. In the methodology recounts functioning as Methods, the writers tend to use Study design or Compliance to mention where the full study protocol can be found. For instance, (4.73) shows a comment included in JAMA-1's Compliance.

(4.73) The full study protocol can be found in Supplement 1. (JAMA-1)

Similarly, a Record: interventions stage can contain information on where the full intervention protocol can be accessed. A comment from NEJM-2's Record: interventions stage is a case in point (see (4.74)).

(4.74) [on prazosin/placebo interventions]: Additional information on escalating dose schedules, the timing of escalation, the criteria for halting escalation, and the differences in maximum dose between men and women is provided in the Supplementary Appendix.[51] (NEJM-2)

Due to the length of study protocols (e.g., 155 pages in JAMA-1), a decision to refer the reader to an external semiotic locution entity (*Supplement 1* in (4.73)) appears to be the only effective way of reconciling the need for transparent RCT reporting and the word constraints of RCT report Methods. Be that as it may, the in-depth analysis revealed the possibility of including the Intervention protocol stage in a lower-order embedded methodology recount that supplants the intervention component in the methodology recount functioning as Methods (see Fig. 4.26).
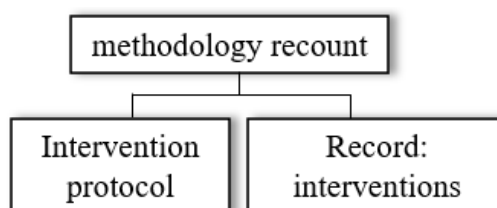
Figure 4.26: Locating the Intervention protocol stage in the generic structure of lower-order methodology recounts.

In the narrowed dataset, such methodology recounts were found in BMJ-1's, JAMA-2's, and LANCET-2's Methods.

At the discourse semantic level, the Intervention protocol stage represents macroTheme because it orients the readership towards the experiential and interpersonal meanings presented in the subsequent Record stage. More precisely, it defines and contextualises the scientific principles behind the itemised activity *intervention*, which in turn:

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[51] For more details on the discourse semantic features of protocol-related comments, see Sections 4.2.3, 4.3.3, and 4.4.1.

- outlines *a strict set of principles* that prescribe a sequence of occurrences; and
- locates the *intervention* within a broader field of *validated treatments*, establishing its dominating positive prosody.

Like the orientational Study design, different Intervention protocol realisations can be compared with reference to the density of experiential content and the amount of evaluation.

Most stages in the dataset are realised through a single present tense co-elaborated state figure, which introduces the *intervention* as a linguistically defined enacted activity entity. These *definitions* contain highly condensed experiential content and implicit evaluation. A representative example can be found in the Intervention protocol that opens the methodology recount supplanting an intervention component in JAMA-2 (see Table 4.18).

Table 4.18: The abridged embedded methodology recount supplanting an intervention component in JAMA-2's methodology recount.

Staging	Text (JAMA-2)
Record: ~~interventions~~ ***[[[[methodology recount]]]]***	**Interventions**
Record 1: ~~massed prolonged exposure therapy~~ [[[[[[methodology recount]]]]]]	***Massed Prolonged Exposure Therapy***
Intervention protocol *definition (method)*	Prolonged exposure therapy[22] is a manualized cognitive behavioral therapy [CBT] consisting of imaginal exposure (repeated recounting of the most disturbing traumatic memory) followed by processing thoughts and feelings related to the imaginal experience; in-vivo exposure (approaching trauma-related situations), psychoeducation about PTSD, and controlled breathing training.
Record: massed prolonged exposure therapy *steps*	Between sessions, participants listened to audio recordings…

As shown in Table 4.18, the intervention *prolonged exposure therapy* is first classified as the enacted activity *manualized cognitive behavioral therapy*, whose characterisation positions JAMA-2's intervention within the broader field of CBT treatments (*prolonged exposure therapy* → type → *CBT*). From an interpersonal perspective, the sharpened 'valeur: specificity' of the *therapy* flags a dominating positive prosody since CBT is a highly regarded PTSD intervention (see (4.75)).[52]

     (4.75) Prolonged exposure therapy[22] is a <u>manualized cognitive behavioral</u> **therapy**

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[52] For instance, see the American Psychological Association (APA) guidelines at https://www.apa.org/ptsd-guideline/.

Furthermore, the use of the external publication [22], which 'reinforces' the 'assertion' in (4.75), implies a protocol that has already been established in the scientific discourse community.

While the characterisation of the therapy contextualises the *prolonged exposure therapy* within the established CBT field, its extensive qualification introduces the protocol principles. As indicated in (4.76), the *manualized CBT* is first elaborated by an embedded non-finite clause, which construes entity co-elaboration and establishes a compositional taxonomy (*manualized CBT* ← part ← *imaginal exposure*).

(4.76) a manualized CBT [[consisting of imaginal exposure]]

This is succeeded by another elaborating embedded clause, which employs the co-elaboration *followed by* to link the *imaginal exposure* with the other parts of *prolonged exposure therapy* – the occurrence *processing thoughts/feelings*, and the reconstrued activity entities *in-vivo exposure*, *psychoeducation*, and *controlled breathing training* (see (4.77)).

(4.77) imaginal exposure (repeated recounting of the most disturbing traumatic **memory**) [[followed by processing thoughts and feelings related to the imaginal experience; in-vivo exposure (approaching trauma-related **situations**), **psychoeducation** about PTSD, and controlled breathing training]]

In the cases of the *imaginal* and *in-vivo exposure*, the parentheses are used to add elaborating clauses that provide activity descriptions, which carries potential interpersonal implications. As marked in (4.77), the sharpened 'valeur: specificity' of some of the principles should flag '+valuation' of *prolonged exposure therapy* as a PTSD treatment. Specifically, an intervention protocol that deals with *traumatic memories / situations* and provides *PTSD psychoeducation* is likely to be perceived as potentially effective in treating PTSD patients.

Eventually, the established compositional taxonomy of the itemised activity *prolonged exposure therapy* can also be read as a dynamic series of the principles momenting the intervention protocol (see (4.78)).

(4.78) intervention protocol (prolonged exposure therapy)
=
imaginal exposure
^
processing thoughts and feelings
^
in-vivo exposure
^
psychoeducation about PTSD
^
controlled breathing training

In the narrowed dataset, there is one rather comprehensive realisation of the Intervention protocol stage. This instantiation of Intervention protocol, which precedes the Record: BDD-NET intervention in BMJ-1, offers more details on the underlying principles and a more saturated positive prosody of the protocol. As shown in Table 4.19, the definition of the *BDD-*

NET treatment protocol precedes rather than incorporates a description of its composition and principles.

Table 4.19: The abridged embedded methodology recount supplanting an intervention component in BMJ-1's methodology recount.

Staging	Text (BMJ-1)
Record: ~~interventions~~ *[[[[methodology recount]]]]*	**Interventions**
Record 1: ~~*BDD-NET intervention*~~ *[[[[[[methodology recount]]]]]]*	**BDD-NET**

Intervention protocol
   definition
   comment
 	
   description (parts)
 	
   principles
	The [BDD-NET] treatment protocol is based on a CBT model for body dysmorphic disorder. The treatment protocol has been validated in a previous trial.[25]
	    In total, BDD-NET consists of eight interactive modules delivered over 12 weeks, with the first five modules containing the core treatment components.[23] Each module is devoted to a special theme and covers psychoeducation, a cognitive behaviour conceptualization of body dysmorphic disorder, cognitive restructuring, exposure and response prevention, more on exposure and response prevention, values based behaviour change, difficulties encountered during treatment, and prevention of relapse. To progress to the next module participants have to complete homework assignments (such as reading text material, answering a quiz at the end of each module, filling out worksheets, or doing exposure and response prevention) and report to their therapist.

Record: BDD-NET intervention *steps*	The participants had contact with an identified therapist throughout the entire treatment using a built-in email system on the BDD-NET webpage…

In the Intervention protocol above, a *definition* is used to locate the *BDD-NET protocol* in the field of *CBT models* (*BDD-NET treatment protocol* → type → *CBT model*). The *model* is further enhanced via the prepositional phrase, which matches BMJ-1's object of study – *body dysmorphic disorder*. Interpersonally, such enhancement can be observed as an instance of sharpened 'valeur: specificity' used to flag '+valuation' of the *protocol*. This positive prosody is advanced through the subsequent *comment* (see (4.79)).

(4.79) **The treatment protocol** has been **validated** in a previous trial.

As indicated in (4.79), the enacted activity entity a *previous trial* is used as the external Appraiser of the treatment protocol as *validated* ('+valuation').

As shown in Table 4.19, the second paragraph starts unpacking (i.e., *describing*) the *BDD-NET protocol* through entity co-elaboration (*consists of*, *is devoted to, covers*). At the field level, this establishes a compositional taxonomy, as illustrated in Figure 4.27.

BDD-NET protocol

| Module 1: psychoeducation | Module 2: cognitive behaviour conceptualization of body dysmorphic disorder | Module 3: cognitive restructuring | Module 4: exposure and response prevention | Module 5: additional exposure and response prevention | Module 6: values based behaviour change | Module 7: difficulties encountered during treatment | Module 8: prevention of relapse |

Figure 4.27: The compositional structure of the BDD-NET protocol.

As far as experiential meanings are concerned, an overview of the compositional structure allows the writer to provide a more detailed information on the *BDD-NET protocol*. From an interpersonal perspective, a *description* of its modules provides more opportunities for saturating its positive evaluation (see (4.80)).

> (4.80) In total, BDD-NET consists of eight **interactive** **modules**… Each **module** is **devoted** to a special **theme** and covers…

In (4.80), for instance, the quality *interactive* inscribes '+valuation' as it entails the patient's active engagement. Likewise, the 'intensified relation' *devoted* and the sharpened 'valeur: specificity' of *themes* as *special* flags '+valuation' of *each module* as a vigorous and highly targeted regimen.

The *descriptions* of the *BDD-NET modules* are followed by a short sequence of occurrence figures linked in terms of 'consequence: purpose' (i.e., *principles* in Fig. 4.28).

| (*in order*) *To* [progress] to the next module |
| participants [have to complete] homework assignments |
| *and* [(have to) report] to their therapist |

consq: purpose

add
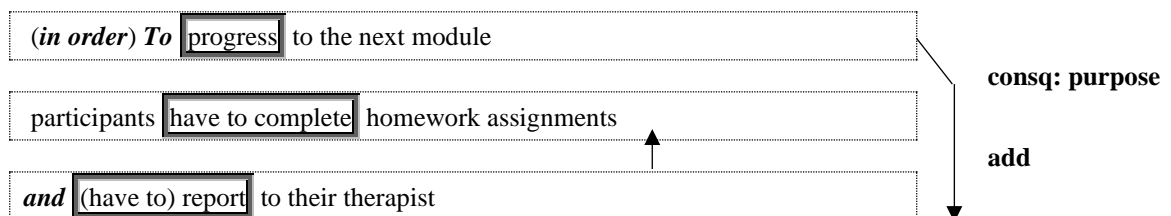
Figure 4.28: CONNEXION analysis of the principles in the BDD-NET protocol in BMJ-1.

Despite the use of the 'consequence: purpose' connexion, it is important to understand that this sequence construes a series of regulated activities (cf. "modulation" in Martin, 1992). In other words, the sequencing construes a series of generalised rules that regulate the participants' *progress* according to *the BDD-NET protocol*; it does not construe a series of facilitated activity steps momenting the BDD-NET intervention in BMJ-1's trial. Modulation also plays an important evaluative role. Specifically, the modal verb *have to* is used to 'intensify' obligation, flagging the scientific rigour of the *BDD protocol*.

In conclusion, Intervention protocol represents the macroTheme in methodology recounts supplanting epistemological intervention components. Like the macroThematic Study design, it predicts the experiential content and establishes a dominating positive prosody of the subsequent Record stages. Nevertheless, there are some significant differences between Study

design and Intervention protocol, which are realised by specific and generalised orientational components, respectively (see Table 4.20).

Table 4.20: A comparative overview of the discourse semantic features in the Study design and Intervention protocol stages.

Stage / Point of comparison	Study design	Intervention protocol
definition	study-specific (past tense)	general (present tense)
sequencing	temporal (past tense *steps*)	causal (present tense *principles*)
evaluation Target	the reported study (specific)	the protocol (in general)
implicit 'similarity: rework' connexion with the Record stages	reformulation (synoptic – detailed)	exemplification (general – specific)

On the one hand, the Study design stage provides a study-specific *definition* of the reconstrued enacted activity *study*, which classifies and summarises the *design of reported study* in the past tense (e.g., *VAST-D study was…*). In more comprehensive stages, this can be followed by a temporal sequence of *steps* and/or evaluative *comments*. On the other hand, the Intervention protocol stage gives a general *definition* of the reconstrued enacted activity *intervention*, which classifies and contextualises *the protocol of the reported intervention* in the present tense (e.g., *Prolonged exposure therapy is…*). To expand on this, the writers can outline the general *principles* through causal sequencing and/or include evaluative *comments*. Although both macroThematic stages enter an implicit internal 'similarity: rework' connexion with the subsequent Record stages, Study design and Record form a "synoptic vs. detailed" relationship, whereas Intervention protocol and Record create a "general vs. specific" relationship. Thus, the former connexion is the one of reformulation (*i.e.*), while the latter is that of exemplification (*e.g.*). Lastly, in the Intervention protocol – Record case, a field shift from general to specific is clearly marked by a shift from the Intervention protocol's use of the present to the Record's use of the past tense (see Tables 4.18 and 4.19).

4.5.2 The Standardisation stage

To ensure trial reliability, the CONSORT Statement strongly advises that RCT report Methods provide information on how the human facilitation of RCT activities was standardised. This requirement is most prominent in the extended version of the Statement for reporting nonpharmacological interventions (Boutron et al., 2008). Specifically, Checklist Item 4 asks for details on the expertise of treatment providers and the strategies used for assessing their trial performance/protocol adherence. Therefore, RCT report writers are supposed to address the standardisation issues pertinent to an itemised RCT activity (e.g., *interventions*) to reflect the communal values of scientific rigour and credibility.

As showed in Section 4.3, Record stages can include instances of evaluation targeted at the facilitator observers. In (4.81), for instance, the quality *trained* inscribes '+capacity' of the *nurses*, positioning the reader to positively evaluate the facilitated *tDCS regimen*.

> (4.81) **Trained** **nurses** administered the tDCS [transcranial direct-current stimulation] regimen. (NEJM-1 Record: interventions)

To further demonstrate scientific rigour and credibility, however, the writer can choose to supplant an epistemological component with a lower-order embedded methodology recount that ends with the Standardisation stage (see Fig. 4.29).
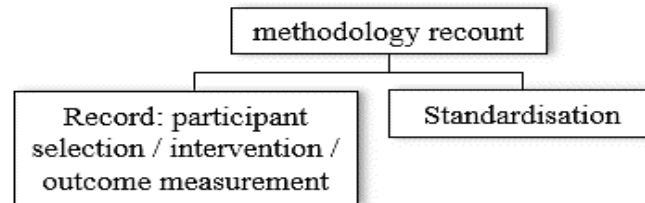
Figure 4.29: Locating the Standardisation stage in the generic structure of lower-order embedded methodology recounts.

In the narrowed dataset, such embedded methodology recounts were found to supplant the following epistemological components in the methodology recounts that function as Methods:

- participant selection (BMJ-1);
- interventions (BMJ-1, JAMA-2, LANCET-1, NEJM-1, i.e., all non-pharmacological trials); and
- outcome measurement (BMJ-1, JAMA-2, LANCET-2, NEJM-2)

Realised by an attitudinal component, Standardisation foregrounds interpersonal meanings with a view to demonstrating that an RCT activity was performed proficiently and consistently. To illustrate the salient discourse semantic features, this section opens with the stage realisation that follows the Record: intervention stages in JAMA-2 (see Table 4.21).

Table 4.21: The embedded methodology recount supplanting the intervention component in JAMA-2's methodology recount.

Staging	Text (JAMA-2)
Record: interventions **[[[[methodology recount]]]]**	**Interventions**
Record: interventions	…
Standardisation *definition* *(facilitators)* *comments* *(supervision)*	***Therapist Training and Supervision*** Therapists were 2 credentialed psychologists and 1 credentialed social worker who had completed a 4-day prolonged exposure therapy workshop, a 2-day PCT workshop, and 2 supervised cases of prolonged exposure therapy and PCT. Therapy sessions were videotaped for purposes of supervision and treatment-adherence monitoring. Weekly consultation calls for prolonged exposure therapy and PCT were conducted separately.

As shown in Table 4.21, JAMA-2's Standardisation introduces the intervention facilitator as a linguistically *defined* entity. Specifically, the observer *therapist* is co-elaborated

with the observer entity *credentialed psychologist/social worker*, setting up a classification taxonomy (*therapist* → type → *credentialed psychologist/social worker*). Interpersonally, the characteristic *credentialed* inscribes '+capacity' of the facilitator *therapists/social worker*. As indicated in (4.82), this positive evaluative prosody is saturated through the extensive qualification of the *2 psychologists and 1 social worker*.

> (4.82) 2 **credentialed** **psychologists** / 1 **credentialed** **social worker** [[who had completed a 4-day prolonged exposure therapy **workshop**, a 2-day PCT (present-centred therapy) **workshop**, and 2 **supervised cases** of prolonged exposure therapy and PCT]]

The embedded clause in (4.82) uses characterisation and/or qualification to graduate the 'extent: distribution: time' (*4-day*, *2-day*, *2*) and 'valeur: specificity' (*prolonged exposure therapy*; *PCT*) of the facilitators' training (*workshop*) and experience (*supervised case*). Given that JAMA-2's interventions consist of the enacted activity entities *prolonged exposure therapy* and *PCT*, this should flag '+capacity' of the facilitators. In other words, the provision of a trial-specific training is likely to position the reader to acknowledge the expertise of the *2 psychologists* and the *1 social worker*.

To demonstrate consistency in the intervention deliveries, the *definition* is followed by two *comments* on quality control (see Table 4.21). As labelled in (4.83-84), these *comments* are construed through two occurrence figures.

> (4.83) Therapy sessions were videotaped for purposes of supervision and treatment-adherence monitoring.

> (4.84) Weekly **consultation calls** for prolonged exposure therapy and PCT were conducted separately.

Within the orbital figure configurations of (4.83-84), there are three enacted activity entities that indicate the involvement of the secondary observers – *supervision*, *treatment-adherence monitoring*, and *consultation calls*. By introducing supervisors and monitors, the writer underscores the efforts to standardise the facilitation, which affords '+valuation' of the performed *prolonged exposure therapy* and *PCT*. In (4.84), the positive reading is also flagged by up-scaling the 'modality' of *consultation calls* as *weekly*.

Assessments of the facilitators' trial-specific expertise were found throughout the narrowed dataset of Standardisation stages. Like in the JAMA-2 stage discussed above, the writers can combine the inscribed '+capacity' of the facilitators with the sharpened 'valeur: specificity' of their training. Another representative example of this strategy can be found in BMJ-1's Standardisation, which follows Record: participation selection (see (4.85)).

> (4.85) All **assessors** had received extensive **training** in structured diagnostic interviews. (BMJ-1: Standardisation of the participant selection)

In (4.85), the enacted activity *training* inscribes '+capacity' of the maximised 'amount' of *assessors*. This positive judgement is then augmented by: (a) up-scaling the 'extent: distribution: time' of their *training* (*extensive*); and (b) sharpening the *training*'s 'valeur: specificity' (*structured diagnostic interviews*).

Furthermore, all the identified Standardisation stages include *comments* that rally around the importance of consistency and protocol adherence. This strategy focuses on the enacted occurrences such as *documenting*, *supervising*, and/or *monitoring*. As shown in JAMA-2 (see (4.83-84)), observer *supervisors* or *monitors* can be introduced implicitly through enacted activity entities such as *supervision* or *consultation*. Additionally, they can be implicitly realised within orbital figure configurations, as in (4.86) (see Table 4.22).

Table 4.22: The orbital configuration of a comment in BMJ-1 Standardisation of interventions (with marked ENGAGEMENT).

	nucleus		
	centre		
discourse semantics	occurrence	=+entity (Domain)	+entity
(4.86)	*was detected*	*no therapist drift (deviation from the treatment protocol*	*(by the monitors)*
lexicogrammar	Process: behavioural	Range: entity	
	verbal group	nominal group	

As exemplified in Table 4.22, *protocol deviations* can also be 'denied', addressing the potential concerns over protocol adherence.

In some Standardisation stages, instructors, supervisors, and/or evaluators are made explicit through a temporal sequence of past tense enacted occurrences, which construes an attitudinally oriented facilitated activity series (e.g., standardisation *steps* in Fig. 4.30).
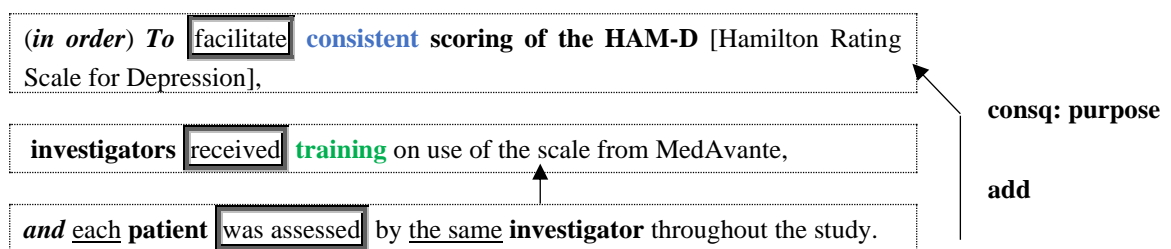
Figure 4.30: CONNEXION and APPRAISAL analysis of the standardisation steps for outcome measurement in LANCET-2.

In Figure 4.30, there is a 'consequence: purpose' connexion between:
- the instigation of the quality *consistent*, which inscribes '+valuation' of the enacted activity *HAM-D scoring* (i.e., LANCET-2's outcome measurement); and
- the enacted occurrences of *receiving training* and *assessing patients*.

In the first facilitating occurrence, the enacted activity *training* inscribes '+capacity' of the observer *investigators* while introducing the instructing institution *MedAvante*. Arguably, the fact that the *investigators* received identical instructions from the same institution also suggests

consistency in *HAM-D scoring*. In the second figure, this is further flagged by the statement that the outcome measurement for <u>*each*</u> patient (amplified 'amount') was facilitated by <u>*the same*</u> *investigator* (sharpened 'valeur: specificity').

When it comes to the consistency of outcome measurement, the analysis revealed another strategy, which focuses on quantifying and interpreting the evaluative measured entity dimensions. For example, (4.87) *comments* on the *reliability* of the primary outcome measurement in JAMA-2.

(4.87) **Test-retest reliability** (<u>α=0.80</u>) and **interrater reliability** (<u>κ = 0.91</u>) are **excellent**.[17] In the current sample, **internal consistency** averaged <u>α = .79</u>. (JAMA-2: Standardisation of outcome measurement)

In (4.87), the initial present tense extended state figure relates the quality *excellent* to the measured dimension *test-retest reliability (α=0.80) and interrater reliability (κ = 0.91)*, which inscribes an intensified '+valuation' through a 'reinforced assertion'. Relying on this assessment, the second past tense figure flags '+valatuation' of *JAMA-2 outcome measurement* by correlating its measured dimension *internal consistency* to the value *α = .79*.

Based on the analysis of discourse semantic features presented in this section, it can be concluded that Standardisation stages employ a variety of evaluative strategies to demonstrate scientific rigour and credibility. More precisely, they are oriented towards establishing the expertise of the observer entities (e.g., *therapists*) and their consistency in facilitating the enacted activities (e.g., *interventions*).

4.5.3 The Power calculation stage

According to the CONSORT Statement (Checklist item 7), RCTs "should be large enough to have a high probability (power) of detecting (…) a clinically important difference of a given size if such a difference exists" (Moher et al., 2010, p. 8). In other words, adequate power calculation is essential to ensure the internal validity of the performed *statistical analysis*. In the narrowed dataset, all statistical analysis components were found to be supplanted by lower-order embedded methodology recounts, which consist of the Power calculation stage followed by Record: statistical analysis (see Fig. 4.31).
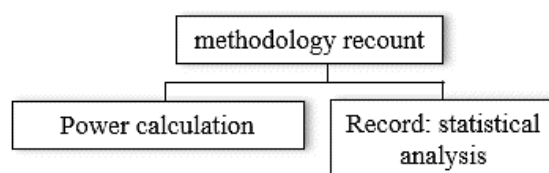
Figure 4.31: Locating the Power calculation stage in the generic structure of lower-order methodology recounts.

To demonstrate scientific rigour and credibility, Power calculation is concerned with assigning the gauged itemised property *power* (i.e., *X% power*) to the itemised activity *statistical analysis*. At the discourse semantic level, this is construed by an attitudinally oriented temporal sequence (i.e., *steps*) linking:

- the instigation of the *statistical power* as a measured dimension of the *statistical analysis*; and

- past tense enacted occurrences involved in determining the *study size*.

To illustrate a prototypical stage realisation, this section starts with the CONNEXION analysis of BMJ-2's Power calculation (see Fig. 4.32).
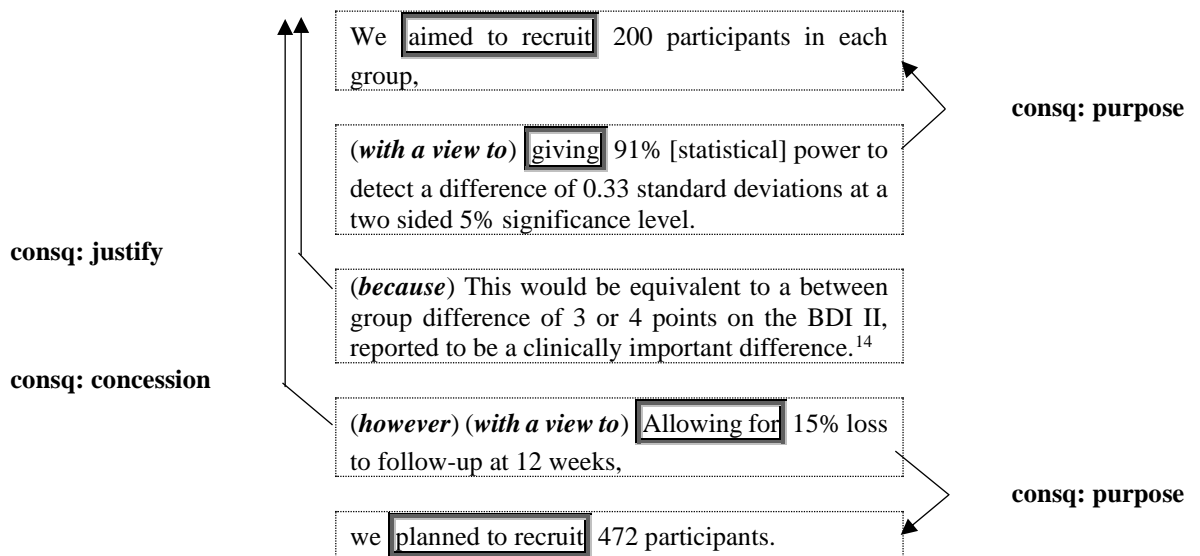
Figure 4.32: CONNEXION analysis of Power calculation in the lower-order embedded methodology recount supplanting the 'statistical analysis' component in the methodology recount functioning as BMJ-2's Methods.

As illustrated in Figure 4.32, the initial sequence contains an implicit 'consequence: purpose' connexion between:

1. the enacted occurrence of *recruiting 200 participants in each group* (i.e., the measured enacted activity entity *study size*); and

2. the instigated state figure in which the study size *gives* a numerical value – *91%* – to the measured dimension *statistical power*.

As indicated in (4.88), the measured dimension *power* is elaborated by an embedded non-finite clause, which construes the enacted activity *statistical analysis* as the facilitator entity in the *detection* of a measured *difference*:

(4.88) (statistical) power [[to detect a **difference** of 0.33 standard deviations at a two sided 5% significance level]]

As shown in (4.89), the following state figure then establishes a co-elaborating relationship between the 'amount' of the *detectable difference* and the 'amount' of *a between group point difference on BDI II*.

(4.89) **the (detectable) difference** of 0.33 standard deviations = **a between group difference** of 3 or 4 points on the BDI II

Furthermore, the writer adds an elaborating clause, which now co-elaborates the 'amount' of *the detectable between group point difference on BDI II* with *a clinically important difference* (see (4.90)).

(4.90) **the (detectable) between group difference** of 3 or 4 points on the BDI II = (reported to be) a **clinically important difference**

As shown in (4.90), this inscribes '+valuation' of the 'amount' of *detectable between group difference*. Importantly, the positive evaluation is negotiated through heteroglossic extra-vocalisation (i.e., 'attribution').

Eventually, it is the combination of the evaluation in (4.90) and the opening temporal sequence in Figure 4.32 that 'justifies' the originally planned *study size* and flags '+valuation' of the *statistical power* (see (4.91)).

(4.91) A **study size** of 400 **participants** (200 per group) is **['+valuation']** because it gives **statistical analysis** 91% **power** [flagged '+valuation'] to detect a **clinically important between group difference.**

Having established '+valuation' of the *study size*, the writer ends the stage by introducing another temporal sequence aimed at up-scaling the 'amount' of the *participants* (*472*) (see (4.92)).

(4.92) (***with a view to***) Allowing for 15% **loss** to follow-up at 12 weeks, we planned to recruit 472 **participants**.

The purpose of the augmented study size is to mitigate a potential *loss* of *participants*. Thus, (4.92) appears to underscore the scientific rigour involved in determining the sample size, hence ensuring the internal validity of the facilitated *statistical analysis*.

The temporal sequences such as those discussed above were found to be characteristic of the entire dataset of Power calculation realisations. Based on the use of heteroglossia, it appears that the attitudinal values of the detectable differences (i.e., effect size) need to be negotiated. To do so, the writers often elaborate on their decisions using 'justification', 'attribution', and/or 'endorsement' (e.g., *Previous research has suggested...*[19]*... Therefore...*).

To summarise, Power calculation uses attitudinally oriented facilitation to demonstrate that the performed *statistical analysis* had enough power to detect a clinically important difference regarding the effectiveness of treatments. Linguistically, this is realised through temporal sequences that are aimed at instigating *X% statistical power*. Furthermore, internal 'consequence: justify' connexions are used to provide heteroglossic 'justifications' of the investigators' decisions regarding the calculation of detectable effect sizes. To further negotiate a positive attitudinal value of the set sizes, 'justification' is usually combined with heteroglossic extra-vocalisation.

4.6 Comprehensiveness of RCT report Methods

Through the analysis of the narrowed dataset, it was found that methodology recounts functioning as RCT report Methods can differ in terms of their comprehensiveness. At the first level of genre embedding, Record stages are obligatory, while Compliance and External involvement stages seem to be optional (see Section 4.7). When it comes to orientational generic components functioning as Study design or Intervention protocol, the realisations can range from a single *definition* to a sequence of *steps*/*principles* accompanied by evaluative *comments* (see Sections 4.2 and 4.5.1). Furthermore, some epistemological components, which function as Records, may involve more evaluation than others (see Section 4.3). To further expand their meaning potential, epistemological components may even be supplanted by additional layers of embedded methodology recounts. In these cases, stages such as Intervention protocol, Standardisation, and/or Power calculation can be introduced (see Section 4.5). Therefore, the findings of this study are in agreement with Swales' (2004) observation regarding the existence of a 'clipped↔elaborated' cline among the realisations of RA Methods. Replacing Swales' form-based scorecard, however, this section uses the results of the preliminary and in-depth analyses to propose a set of SFL-based criteria for positioning methodology recounts along the 'synoptic↔comprehensive' cline (see Fig. 4.33).
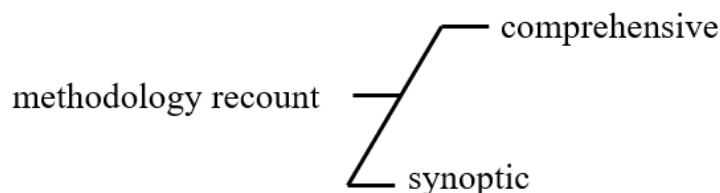
Figure 4.33: The cline between synoptic and comprehensive methodology recounts functioning as RCT report Methods.

At the synoptic end of the cline, it could be argued that a methodology recount only requires the Study design stage. As the purpose of Study design is to classify, summarise, and evaluate the overall methodology (see Section 4.2), it can be used to provide essential information on the performed trial (see, e.g., Table 4.23).

Table 4.23: The Study design stage in the methodology recount of JAMA-1.

Staging	Text (JAMA-1)
Study design	**Study Design** VA Augmentation and Switching Treatments for Improving Depression Outcomes (VAST-D) was a multisite randomized, single-blind, parallel-assignment trial including US Veterans Health Administration (VHA) patients whose condition was unresponsive to at least 1 course of antidepressant treatment.

For instance, JAMA-1 Study design informs the reader of the trial's:

- object of study (*Augmentation and Switching Treatments for Improving Depression Outcomes*);

- field of study (*a multisite randomized, single-blind, parallel-assignment trial*); and

- participants (*VHA patients whose condition was unresponsive to at least 1 course of antidepressant treatment*).

Be that as it may, this thesis has not identified any instances of Methods realised by an embedded methodology recount solely consisting of Study design. This seems unsurprising since the exclusion of Record stages would have prevented the writers from providing the amount of detail that would satisfy the writing requirements imposed by the CONSORT Statement. Furthermore, the absence of any attitudinal components would have offered rather limited opportunities for demonstrating ethics, scientific rigour, and credibility of the trial. Therefore, the medical discourse community demands that RCT report writers provide a more comprehensive methodology recount.

To make the initial step away from the synoptic pole, RCT report methodology recounts include a series of Record stages after Study design. While the orientational Study design contextualises the method as an *RCT*, the subsequent epistemological Records focus on the itemised activities momenting the *RCT*: *participant selection*, *randomisation&masking*, *interventions*, *outcome measurement*, and *statistical analysis* (see Fig. 4.34).
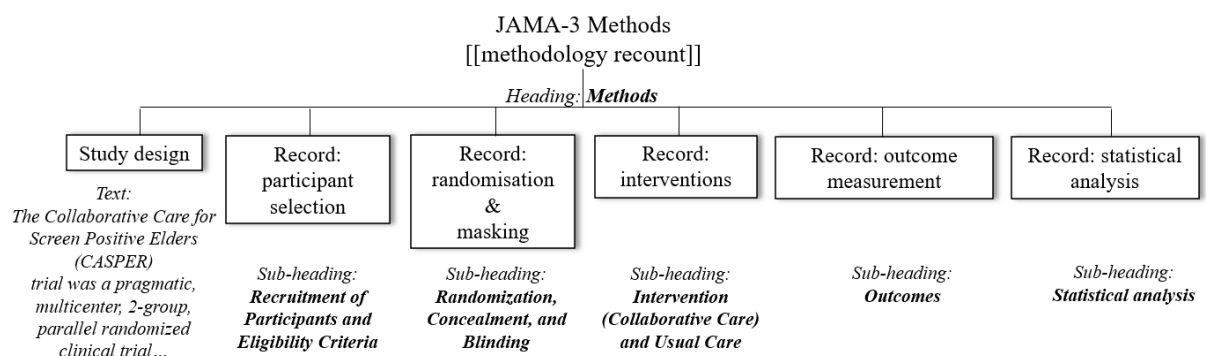
Figure 4.34: Generic structure of JAMA-3's Method section: the first layer of embedding.

In Figure 4.34, for instance, JAMA-3's Study design defines the reported *CASPER trial*, representing macroTheme of the entire methodology recount. Afterwards, the textual organisation of JAMA-3's methodology recount is scaffolded through sub-headings (e.g., *Outcomes* in Fig. 4.34). A sub-heading usually indicates the focus of the epistemological component realising the Record stage (e.g., Record: outcome measurement). As demonstrated in Section 4.3, each Record stage then provides more details on the relevant participants, instruments, and circumstances to fulfil the requirements set in the CONSORT Statement (Checklist Items 3-12 in Moher et al., 2010).

Furthermore, the discourse semantic analysis of the Record stages revealed different degrees of comprehensiveness. Each Record outlines the *steps* and/or *principles* that facilitate and/or regulate the completion of an RCT activity. Linguistically, this is usually achieved through sequences of the enacted occurrences in past tense (see Fig. 4.35).
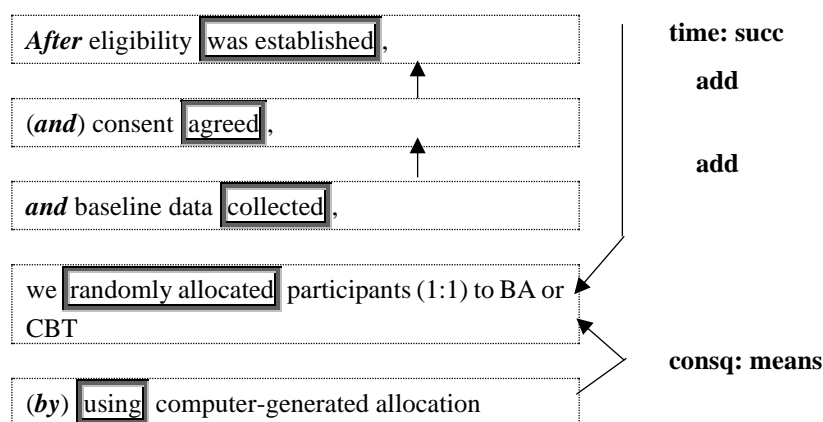
Figure 4.35: Randomisation steps in the Record: randomisation&masking stage of LANCET-1's methodology recount.

As an illustration, Figure 4.35 shows the use of 'time: successive' and 'consequence: means' connexions in the temporal sequence that facilitated LANCET-1's randomisation. To indicate transparency in reporting, however, some stage realisations choose to add a *comment* on protocol availability (see (4.93)).

> (4.93) Additional information on escalating dose schedules, the timing of escalation, the criteria for halting escalation, and the differences in maximum dose between men and women is provided in the Supplementary Appendix. (NEJM-2)

Additionally, some realisations opt to disclose extra information on the facilitating entities so as to suggest the ethics, scientific rigour, and/or credibility of the facilitated *step*. These stages employ a range of interpersonal resources to evaluate observers, instrumental things, and/or enacted activity entities. To showcase the different degrees of comprehensiveness that can exist when reporting on a methodological *step*, Table 4.24 presents the APPRAISAL analyses of one of the participant selection *steps* realised in JAMA-1 and BMJ-1 Records.

Table 4.24: Comprehensiveness in reporting on a participant selection step: a comparison of the interpersonal resources in JAMA-1's and BMJ-1's Record stages.

JAMA-1 step (more synoptic)	BMJ-1 step (more comprehensive)
Diagnostic eligibility was further established by research staff using criteria from the <u>Diagnostic and Statistical</u> **Manual** <u>of Mental Disorders, Fourth Edition</u>, (DSM-IV).[16]	Potentially suitable participants underwent a structured diagnostic interview with a clinical psychologist or with a **trained** **student** in <u>the final</u> **semester** of <u>a five year</u> <u>clinical psychology</u> **programme**. **The interviews** were conducted **over** **telephone**, which is a **reliable** **administration format** <u>for structured psychiatric</u> <u>assessments.</u>[32]

As shown in Table 4.24, JAMA-1's writer uses an 'assertion' to introduce the observer *research staff* and the instrumental thing *DSM-IV*. In this case, there is only invoked '+valuation'

of *DSM-IV*. More precisely, a positive evaluation of *the Manual* is flagged through its characterisation and qualification, which sharpen its 'valeur: specificity' (*Diagnostic and Statistical…of Mental Disorders*) and highlight its 'extent: proximity: time' (*Fourth Edition*). The positive prosody is saturated by referring to the trial-external publication [16], which identifies *DSM-IV* as an established assessment tool.

On the other hand, Table 4.24 shows that BMJ-1's writer accompanies invoked attitude with the Appraising tokens that inscribe a positive evaluation of both the facilitator observer and the facilitatory enacted activity entities. Specifically, the quality *trained* inscribes '+capacity' of *student*, while quality *reliable* inscribes '+valuation' of *telephone interviews for structured psychiatric assessments*. In addition, the BMJ-1 extract uses a 'reinforced assertion' to evaluate the *administration format*, which appears to strengthen the validity of evaluation and imply a heteroglossic 'justification' of the investigators' choice of the assessment tool (see (4.94)).

(4.94) **The interviews** were conducted **over telephone** (*because*) **it** is a **reliable administration format** <u>for structured psychiatric assessments.</u>[32] (BMJ-1)

In summary, a more comprehensive Record stage aims to justify the *steps* and provide more information on the facilitating entities, including observers, instrumental things, and enacted activities. Interpersonally, this should help position the reader to positively appraise the facilitated enacted occurrences. Moreover, more comprehensive Records tend to accompany the *steps*/*principles* with *comments* that refer the reader to a document with the full study protocol.

To further demonstrate ethics, scientific rigour, and credibility of the trial, methodology recounts may be become even more comprehensive by adding Compliance and/or External involvement. Likewise, additional layers of embedded methodology recounts can be used to supplant the epistemological components as Record stages (see Section 4.5). This enables the writer to zoom in on individual RCT activities, expanding the meaning potential of the supplanted epistemological components. In other words, a multilayered genre embedding makes the methodology recount more comprehensive by introducing the stages that rally around the communal values in a more direct manner. These stages include:

- Intervention protocol, which specifies the scientific principles underlying an activity (instead of referring the reader to another document for details);
- Standardisation, which specifies the steps undertaken to ensure proficiency and consistency in activity facilitation (instead of interweaving evaluation into a record of methodological steps); and

- Power calculation, which specifies how sample size was determined to ensure the internal validity of *statistical analysis* (instead of merely stating the percentage of statistical power).

In conclusion, RCT report methodology recounts can be compared with reference to their comprehensiveness by observing the number of Intervention protocols and those stages realised by attitudinal generic components. For instance, Table 4.25 uses this criterion to rank the relative comprehensiveness the eight methodology recounts included in the narrowed dataset.[53]

Table 4.25: The number of Demonstrating-Ethics-Rigour-and-Credibility stages and Intervention protocol stages identified in the narrowed dataset.

Stage / RCT Code	1st layer of embedding		Additional layers of embedding			Total #
	Compliance	External involvement	Intervention protocol	Standardisation	Power calculation	
BMJ-1*	0	1	1	5	1	8
JAMA-2	1	0	2	2	1	6
LANCET-1	0	1	0	2	1	4
LANCET-2	0	1	1	1	1	4
NEJM-1	0	0	0	1	1	2
NEJM-2	0	0	0	1	1	2
JAMA-1	1	0	0	0	1	2
BMJ-2	0	1	0	0	1	2
*black font marks a non-pharmacological trial; orange font marks a pharmacological trial.						

As shown in Table 4.25, the BMJ-1 trial of the online BDD-NET therapy for body dysmorphic disorder contains the highest total number Intervention protocols and attitudinal components. Arguably, this indicates that BMJ-1 is the most comprehensive methodology recount identified in this study. On the other hand, there are four methodology recounts – NEJM-1/2 and JAMA-1/2 – that include only include two attitudinal components, which makes them the least comprehensive. To explore the more nuanced differences among these four methodology recounts, one could look at the comprehensiveness (i.e., the use of interpersonal resources) in the Record stages. Lastly, Table 4.25 suggests that non-pharmacological trials in the narrowed dataset seem to be more comprehensive than those of pharmacological treatments. This is in line with the CONSORT guidelines requiring more detailed records of non-pharmacological RCT reports. However, a larger linguistic study is needed to make claims regarding the different degrees of comprehensiveness present in RCT reports of (non-)pharmacological trials.

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[53] For detailed tree diagrams of the generic structures of methodology recounts identified in this study, see Appendix 4.

4.7 Summary: an axial perspective on methodology recounts in clinical psychology RCT reports

Following the preliminary analysis of 15 sampled RCT report Methods and the in-depth analysis of the narrowed dataset (n=8), this section summarises the identified generic structure of clinical psychology methodology recounts and the salient discourse semantic features. Adopting an axial perspective, it outlines the systemic options that RCT report writers have when providing a record of their methodology and describes the structures that realise these options (cf. *axial relations* in Martin, 2013).

In this study, all RCT report Methods are realised by an embedded methodology recount, which belongs to the family of retrospective procedural research genres *(cf. methodology recount* in Nesi & Gardner, 2012). As a starting point, Figure 4.36 summarises the occurrence rates of all the methodology recount stages identified in the preliminary genre analysis.[54]
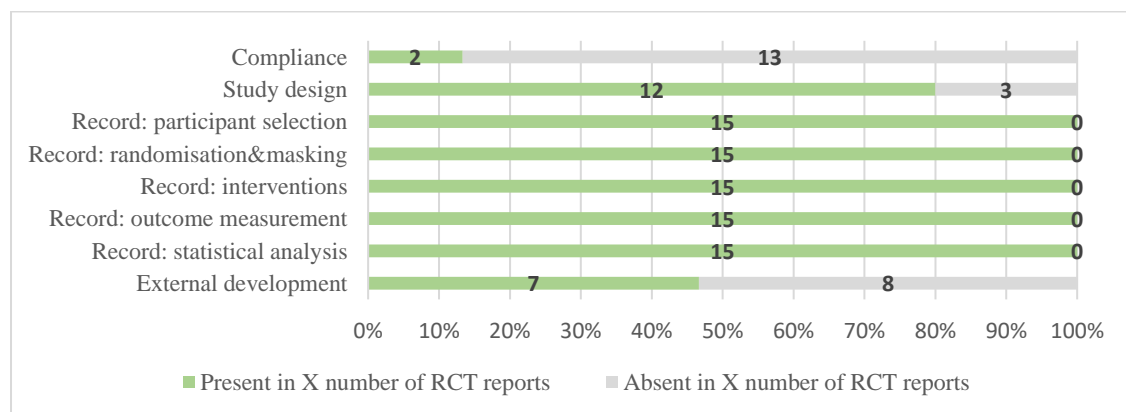
Figure 4.36: Stage occurrence rates in the embedded methodology recounts functioning as RCT report Methods.

As shown in Figure 4.36, each methodology recount contains all five epistemological Records and most of them include the orientational Study design. By contrast, Compliance and External involvement were found to be rather optional.

Among the epistemological components, participant selection and statistical analysis always function as the first and final Record stages. The sequencing patterns of the other Records suggest a preference for organising the epistemological components in accordance with the RCT workflow:

- 73%: R: randomisation&masking ^ R: interventions ^ R: outcome measurement;
- 20%: R: interventions ^ R: randomisation&masking ^ R: outcome measurement; and
- 7%: R: randomisation&masking ^ R: outcome measurement ^ R: interventions.

In Record stages, RCT report writers outline the methodological *steps* that moment an RCT activity. The discourse semantic analysis of the narrowed dataset revealed that this is

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[54] To see staging of individual RCT Method stages included in the preliminary genre analysis, see Appendix 2.

typically realised through a temporal sequence of the enacted occurrences in past tense. To ascertain a positive evaluation of the facilitated activity, the sequence can include internal 'consequence: justify' connexions and/or additional information on the facilitating entities (e.g., the observers' experience). Furthermore, causal sequences (*principles* phase) can be used to construe the activities that regulated participant selection, outcome measurement, and/or accidental instances of unmasking. In Record: participant selection/outcome measurement, facilitated and/or regulated activities can alternatively be construed through study-specific *definitions* of the participants, selection criteria, and/or outcome measures. Lastly, Records may include evaluative *comments* pertinent to activity facilitation or regulation. As a summary, Table 4.26 outlines the most salient language resources of Record stages identified in this study.

In addition to the obligatory Record stages, the Study design stage appears in 80% of the entire dataset (see Fig. 4.36). As exemplified in (4.95), the methodology recounts that miss this stage (JAMA-2, LANCET-1/3) specify their study designs using marked Theme in the first figure of the Record: participant selection stage.

(4.95) <u>In this randomised controlled trial, we</u> recruited participants… (LANCET-3)

Invariably, Study design was found to precede the Record stages, which is consistent with its role as textual macroTheme. As its purpose is to classify, summarise, and evaluate the overall method, it both predicts the subsequent Record stages and establishes a dominating positive prosody of the trial. To construe Study design, a further analysis of the narrowed dataset demonstrated that writers may use a varying degree of content density and evaluative explicitness. These variations can range from a single *definition* of the reconstrued enacted activity *study* through a past tense co-elaborated state figure to a temporal sequence of methodological *steps* accompanied by attitudinal *comments* (see Table 4.27).

Table 4.26: Language resources for momenting RCT activities in Record stages.

	Record: participant selection	**Record: randomisation &masking'**	**Record: interventions**	**Record: outcome measurement**	**Record: statistical analysis**
	Textual resources: PERIODICITY – Implicit 'simil: rework' (*i.e.*) connexions introduce a sequence of sub-steps elaborating on individual steps (i.e., hyperThemes)				
Ideational resources (momenting RCT activities)	IDEATION& CONNEXION: sequences: - temporal (facilitation): past tense occurrence figures linked by 'time: succ' (*then*) and 'consq: purpose/means' (*to, by*) - causal (regulating selection): past tense occurrence figures linked via 'consq: condition' (*if*) study-specific entity definitions: - co-elaborated figures in past tense defining: o observed people (*Eligible participants were…*) o semiotic needs (*Exclusion criteria were…*)	IDEATION& CONNEXION: sequences: - temporal (facilitation): past tense occurrence figures linked by 'time: succ' (*then*) and 'consq: purpose/means' (*to, by*) - causal (regulating accidental unmasking): past tense occurrence figures linked via 'consq: condition' (*if*)	IDEATION& CONNEXION: sequences: - temporal (facilitation): past tense occurrence figures linked by 'time: succ' (*then*) and 'consq: purpose/means' (*to, by*)	IDEATION& CONNEXION: sequences: - temporal (facilitation): past tense occurrence figures linked by 'time: succ' (*then*) and 'consq: purpose/means' (*to, by*) study-specific entity definitions: - co-elaborated figures in past tense defining the primary and secondary outcomes	IDEATION& CONNEXION: sequences: - temporal (facilitation): past tense 'occurrence' figures linked by 'time: succ' (*then*) or 'consq: purpose/means' (*to, by*) - figure augmentations (positions and instigations) used as steps (*We included X as a covariate*)
Interpersonal resources (appraising activity facilitation)	ENGAGEMENT: - 'justification' of steps (*because*) - 'endorsement' of other studies (*X has shown*) Positive ATTITUDE (incl. flagged via GRADUATION): - '+desire' of observed people (*consenting/ interested participants*) - '+capacity' of facilitator entities (*trained evaluators*) - '+valuation' of facilitatory entities (*reliable assessment tools*)	ENGAGEMENT: - 'countering/ denying' unblinding (*no, although*) Positive ATTITUDE (incl. flagged via GRADUATION): - '+valuation' of the enacted activity via attitudinally-oriented facilitation (*to ensure…*) - '+veracity' of facilitator entities (*unbiased assigners*) - '+composition/ valuation' of facilitatory entities (*balanced/secure tools*)	ENGAGEMENT: - 'justification' of steps (*because*) - 'endorsement/ attribution' introducing other studies (*X has shown/suggested*) Positive ATTITUDE (incl. flagged via GRADUATION): - '+capacity' of facilitator entities (*trained treatment providers*) - '+valuation' of facilitatory entities (*established procedures*) '+valuation' of transparency in reporting (*full protocol can be found…*)	ENGAGEMENT: - 'justification' of steps (*because*) - 'endorsement' of other studies (*X has shown*) Positive ATTITUDE (incl. flagged via GRADUATION): - '+veracity/ propriety/ capacity' of facilitator entities (*unbiased/ ethical/trained evaluators*) - '+valuation' of facilitatory entities (*reliable assessment tools*)	ENGAGEMENT: - 'justification' of steps (*because*) - 'reinforced assertions' introducing external 'publication' entities (…[X]) Positive ATTITUDE (incl. flagged via GRADUATION): - '+valuation' of facilitatory 'entities' (*established and reliable statistical tools*) '+valuation' of transparency in reporting (*statistical plan was approved and can be found…*)

Table 4.27: Language resources for classifying, summarising, and evaluating a study in Study design.

	Study design
Textual resources (contextualising the study design)	PERIODICITY: - macroTheme of the methodology recount genre; - implicit 'simil: rework' (*i.e.*) connexions introduce a sequence of RCT steps elaborating on the study definition (i.e., hyperTheme)
Ideational resources (classifying and summarising the study)	IDEATION & CONNEXION: study-specific entity definition: - a co-elaborated state figure in past tense defining the enacted activity entity *study* (*The study was…*) temporal sequence (facilitation): - past tense occurrence figures linked via external 'time: succ' (then) and 'consq: purpose/means' (*to/by*)
Interpersonal resources (appraising the study)	ENGAGEMENT: - 'countering/denying' protocol deviations or unethical behaviour (*despite/no deviations*) - 'pronouncement' to vouch for the quality of reporting (*The authors vouch…*) Positive ATTITUDE (incl. flagged by GRADUATION): - '+capacity/tenacity' of the observer entities (*error corrections, protocol adherence*) - '+valuation' of the enacted activity entity RCT study (*approved*) - '+valuation' of the semiotic locution RCT report (*accurate/complete/in accordance with the CONSORT Statement*)

Unlike the Study design and Record stages, the preliminary analysis indicates that Compliance and External involvement stages are optional and potentially journal-specific (see Fig. 4.36). Within the dataset, only two methodology recounts start with Compliance – JAMA-1/2. By including Compliance as the initial stage, JAMA-1's/2's writers foreground the axiological aspects of an *RCT* as an axiologically charged technicality (i.e., axi-tech). Thus, the choice of the initial stage in a methodology recount appears agnate to the thematic prominence at the discourse semantic level:

Study design ^ Record ⋮ Compliance ^ Study design ^ Record ⁞

The RCT met all the ethical, scientific, and transparency requirements ⋮

All the ethical, scientific, and transparency requirements *were met by the RCT.*

Similarly, all BMJ and LANCET methodology recounts include the External involvement stage to emphasise the investigators' integrity throughout the RCT. In six out of seven cases, it is realised as the final stage. As ethics and credibility are the properties normally assigned to an *RCT*, involving such a stage appears agnate to narrowing the 'valeur: authenticity' of the medical axi-tech:

Study design ^ Record ⋮ Study design ^ Record ^ External involvement ⁞

The RCT is ethical and credible. ⋮ *The RCT is* *truly* *ethical and credible.*

At the discourse semantic level, Compliance lists the figures (i.e., *comments* phase) that introduce trial-external entities that guarantee the quality of the RCT (reporting). Likewise, External involvement employs lists of the figures that specify and quantify external assessments (*comments* phase) and/or contributions (*contributions* phase). Interpersonally, both stages

utilise a variety of interpersonal resources to position the reader to positively evaluate the reported trial. Based on the analyses presented in Section 4.4, Table 4.28 outlines the most salient ideational and interpersonal resources employed to construe Compliance and External involvement.

Table 4.28: Language resources for demonstrating ethics, scientific rigour, and credibility in Compliance and External involvement.

	Compliance	External involvement
Ideational resources (RCT as an itemised activity)	IDEATION & CONNEXION: explicit/implicit 'addition' (*and*) of: - past tense figures with occurrences and/or semiotic locutions that imply external assessment (*approved, provided a certificate*) - present tense/modalised state figures that indicate protocol availability (*X is available/can be found…*)	IDEATION & CONNEXION: explicit/implicit 'addition' (*and*) of: - past tense figures with occurrences that entail external assessment (*review*) or contribution (*contribute*) - past tense augmented occurrence figures that introduce investigators as decision makers (i.e., instigators/position sources) and trial-external entities as facilitators (*X was asked (by us) to do…*)
Interpersonal resources (appraising the study)	ENGAGEMENT: - 'bare assertions' introducing external Appraisers (*X approved the study*) Positive ATTITUDE (incl. flagged by GRADUATION): - '+capacity' of Appraisers (institution entities with competent authority, e.g., *National Institutes of Health*) - '+valuation' of the enacted activity *study* (*approved, safe, confidential*) - '+valuation' of transparency in reporting (*full protocol can be found…*)	ENGAGEMENT: - 'denying' involvement of funding entities or observed people (*no involvement*) - 'attributing' evaluation (*All of them said…*) Positive ATTITUDE (incl. flagged by GRADUATION): - '+capacity' of Appraisers and contributors (institutions specialising in study design, e.g., *The Research Materials Advisory Service*) - '+valuation' of the enacted activity entity *study* (*recognised the value of trial*)

In summary, the preliminary analysis of 15 RCT report methodology recounts revealed five obligatory Record stages, which tend to be preceded by Study design. Additionally, the writer may choose to start with Compliance and/or use External involvement as the final stage (or penultimate in BMJ-1). Following Martin (2013), these findings can be formalised as a system network presented in Figure 4.37.
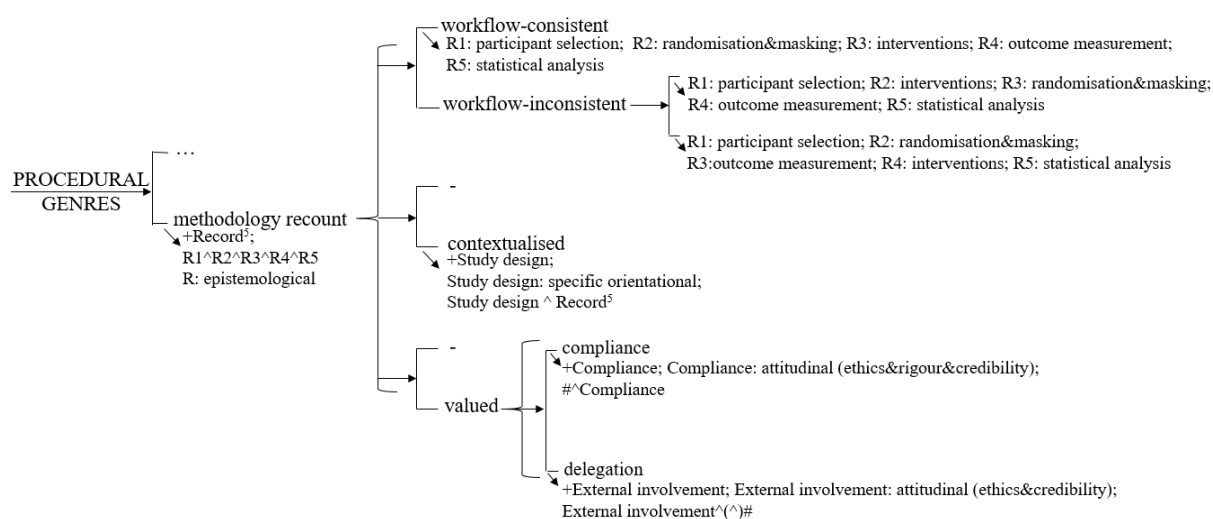
Figure 4.37: A typological system network of methodology recounts functioning as Methods in clinical psychology RCT reports.

As illustrated above, clinical psychology RCT reports construe the Methods stage by selecting the 'methodology recount' feature from the PROCEDURAL GENRE family. The downward arrow below the feature (↘) introduces the realisation statements with the rules for structuring a methodology recount. The function +*Record*[5] indicates that it must contain five Record stages that moment the RCT report methodology. Moreover, *R: epistemological* requires that each Record stage be realised by an epistemological generic component. The three simultaneous systems introduced by the right-facing brace ({) represent the options that writers have for:

- organising the epistemological components that function as Record stages;
- contextualising the methodology through the optional Study design stage; and
- valuing the methodology through an optional stage realised by an attitudinal component.

The top system network displays the options that are available for ordering Record stages. On the one hand, the writer can opt for the 'workflow-consistent' feature (73% of the sampled Methods). In this case, the order of the epistemological components matches the RCT workflow diagram (↘ *R1: participant selection; R2: randomisation&masking; R3: interventions; R4: outcome measurement; R5: statistical analysis*). Alternatively, writers can construe the 'workflow-inconsistent' feature by swapping the positions of (a) randomisation&masking and interventions (20% of the sampled Methods); or (b) interventions and outcome measurement (7% of the sampled Methods).

The middle system network shows the option of including a non-obligatory stage to contextualise the study. This is illustrated by a system with the feature 'contextualised' and a dash '−'. If the feature 'contextualised' is selected (80% of the sampled Methods), the writer must insert the Study design stage (↘ +*Study design*), which is realised by a specific orientational component (↘ *Study design: specific orientational*).[55] Furthermore, the realised Study design must precede the realised Record stages (↘ *Study design ^ Record*[5]).

The bottom system network indicates that RCT report writers have the option to include a non-obligatory stage to value the study. This is represented by a system with the feature 'valued' and a dash '−'. To construe the feature 'valued', the writer needs to insert at least one stage realised by an attitudinal component. In addition, the writer needs to make an additional choice between valuing the study in terms of 'compliance' or 'delegation' of responsibilities. The use of the combined brace and square brackets ({[) shows that these features are not mutually exclusive. To realise the 'compliance' feature, the writer must insert Compliance as the initial stage (↘ +*Compliance; #^Compliance*; 13% of the sampled Methods). To realise the

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[55] A specific orientational generic component as opposed to a generalised orientational component realising the Intervention protocol stage.

'delegation' feature, the writer must insert External involvement as the final or penultimate stage (↘ +*External involvement; External involvement^(^)#*; 47% of the sampled Methods).

As demonstrated in Section 4.5, a closer genre analysis of the narrowed dataset revealed that methodology recounts can contain additional layers of embedded genres functioning as Record stages.[56] It was found that lower-order embedded methodology recounts can be employed to supplant the following epistemological genre components: participant selection, interventions, outcome measurement, and statistical analysis. To zoom in on the context and values pertinent to a specific RCT activity, they can contain orientational and/or attitudinal component sub-types to realise the 'contextualised' and/or 'valued' features of the methodology recount.

In the narrowed dataset, five out of eight methodology recounts functioning as Methods use an embedded methodology recount to supplant the interventions component. Among these, BMJ-1, JAMA-2, and LANCET-2 insert Intervention protocol as the initial stages, which contextualises their intervention methodology recounts (↘ +*Intervention protocol; Intervention protocol^ Record: interventions*). As discussed in Section 4.5.1, the Intervention protocol stage is realised by a generalised orientational component (↘ +*Intervention protocol: generalised orientational*), which classifies, summarises, and evaluates the scientific principles underpinning the itemised activity *intervention*. As is the case with Study design, this orientational component can achieve this goal using a more or less condensed experiential content, with varying degrees of evaluative explicitness. For Intervention protocol, these variations can range from a single present tense co-elaborated state figure *defining* the protocol to a causal sequence of occurrences (*principles* phase) accompanied by compositional *descriptions* and evaluative *comments* (see Table 4.29).

Table 4.29: Language resources for classifying, summarising, and evaluating the scientific principles in Intervention protocol.

	Intervention protocol
Textual resources (contextualising the intervention)	PERIODICITY: - macroTheme of the methodology recount supplanting the interventions component; - in more comprehensive stage realisations, protocol definition represents hyperTheme, which can be elaborated by a description and/or a set of principles;
Ideational resources (classifying and summarising the protocol)	IDEATION & CONNEXION: generalised entity definition: - a co-elaborated state figure in present tense defining the enacted activity entity *intervention* (*The intervention is…*) entity elaboration: - co-elaborated state figures in present tense build a compositional taxonomy of the enacted activity *intervention* (*The intervention consists of…*) causal sequence (regulation): - modulated occurrence figures linked via external 'time: succ' (then) and 'consq: purpose/means' (*to/by*)
Interpersonal resources	ENGAGEMENT: - 'reinforced assertions' introducing trial-external publications (…^X)

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[56] To see staging of individual RCT report Method stages included in the in-depth genre analysis, see Appendix 4.

(appraising the protocol)	- 'endorsing' the enacted activity or publications appraising the protocol (*Trial X has shown...*[X]) Positive ATTITUDE (incl. flagged by GRADUATION): - '+valuation' of the intervention protocol (*validated, highly specific, engaging, scientifically rigorous*)

Among the embedded methodology recounts that supplant the intervention component, those found in non-pharmacological Methods (BMJ-1, JAMA-2, LANCET-1, and NEJM-1) include Standardisation as the final stage. This makes the embedded methodology recount 'valued (standardised)' (↘ +*Standardisation; Standardisation*^#). As stated in Section 4.5.2, this stage aims to demonstrate that the itemised activities involving human facilitation were performed proficiently and consistently. Thus, it is unsurprising that Standardisation also appears as the final stage in the embedded methodology recounts supplanting the participant selection (BMJ-1) and outcome measurement (BMJ-1, JAMA-2, LANCET-2, NEJM-2) components. At the discourse semantic level, this stage lists the figures that are oriented towards establishing the expertise and reliability of the facilitating entities (*definition* and *comments* phases). Furthermore, short attitudinally oriented temporal sequences can be used to outline the *steps* undertaken to ensure consistency in performing an activity. Table 4.30 summarises the salient language resources that can be employed to demonstrate appropriate activity standardisation.

Table 4.30: Language resources for demonstrating scientific rigour and credibility of an RCT activity in Standardisation.

	Standardisation
Ideational resources (standardising an RCT activity)	IDEATION & CONNEXION: study-specific entity definition: - a 'co-elaborated state' figure in past tense defining the observer entity (*Therapists were...*) explicit/implicit 'addition' (*and*) of: - past tense occurrence figures that introduce secondary observers responsible for quality control and protocol adherence (*trainers, supervisors, reviewers*) attitudinally-oriented temporal sequences (facilitation): - external 'consq: purpose/means' (*to/by*) connexion between past tense occurrence figures and the instigation of *reliability/ consistency*
Interpersonal resources (appraising activity standardisation)	ENGAGEMENT: - 'reinforcing assertions' in attitudinal propositions (*X is reliable...*[X]) - 'denying' protocol deviations (*no drifts*) Positive ATTITUDE (incl. flagged by GRADUATION): - '+capacity' of the observers (*experienced, trial-specific expertise*) - '+valuation' of the enacted activity entity *training* (*trial-specific and of appropriate length*) - '+capacity' of the observer *trainers, supervisors, or reviewers* (*distinguished qualifications, trial-specific expertise*) - '+valuation' of the measured entity dimension reliability (*excellent*)

In the narrowed dataset, the statistical analysis component is always supplanted by a 'valued (powered)' methodology recount, which contains Power calculation as the initial stage (↘ +*Power calculation; #*^*Power calculation*). As discussed in Section 4.5.3, Power calculation is used to demonstrate the internal validity of the itemised activity *statistical analysis*. Linguistically, this is construed by an attitudinally oriented temporal sequence (*steps* phase)

linking the calculation of the *study/effect size* to the instigation of *X% statistical power*. Table 4.31 summarises the salient language resources that can be employed to demonstrate adequate power calculation.

Table 4.31: Language resources for demonstrating the scientific rigour and credibility of statistical analysis in Power calculation.

	Power calculation
Ideational resources (powering statistical analysis as an itemised activity)	IDEATION & CONNEXION: attitudinally-oriented temporal sequence (facilitation): - external 'consq: purpose/means' (*to/by*) links past tense occurrences that determine the *study/effect size* and instigate the state figure assigning *X% power* to the enacted activity entity *statistical analysis* - internal 'consq: concession' (*however*) introduces an increased sample size due to potential participant attrition
Interpersonal resources (appraising power calculation)	ENGAGEMENT: - 'justification' of steps (*because, based on*) - 'attributing' positive assessment to enacted activity or publication entities as external Appraisers (*Trial X has suggested…X*) Positive ATTITUDE (incl. flagged by GRADUATION): - '+valuation' of *the study/effect sizes and statistical power (large enough to detect clinically important differences provided they exist)*

So far, this section has dealt with a typological overview of the methodology recount genre (cf. typology and topology in Martin, 2013, p. 119). For instance, the system network presented in Figure 4.37 includes simultaneous systems with features "that are categorically differentiated from one another" (e.g., 'workflow-consistent' or 'workflow-inconsistent'). As shown in Section 4.6, however, the axial relations in clinical psychology methodology recounts can also be explored from a topological point of view (cf. Bloor, 1999; Swales, 2004). More precisely, a cline with the 'synoptic' and 'comprehensive' features as its poles can be used to position methodology recounts "gradiently in relation to one another" (see Fig. 4.38).
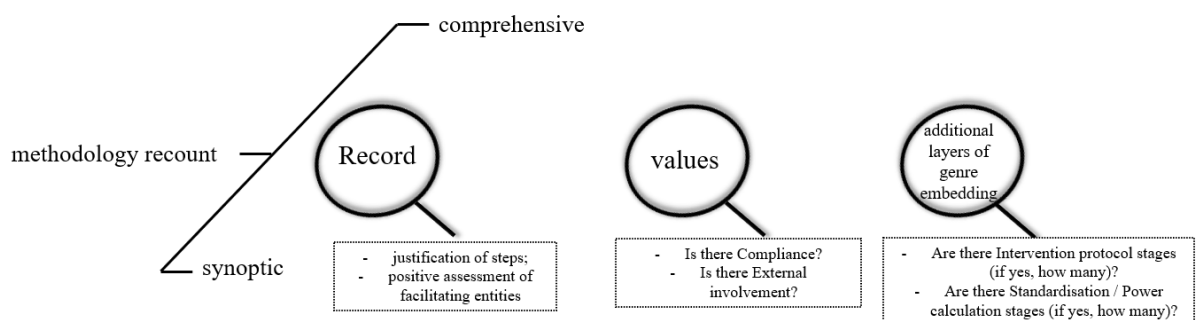
Figure 4.38: A topological view on methodology recounts functioning as Methods in clinical psychology RCT reports.

As illustrated in Figure 4.38, methodology recounts functioning as RCT report Methods can be labelled as more or less comprehensive/synoptic. To compare any two methodology recounts, it is essential that an analyst takes a closer look at the realised generic components. When it comes to the obligatory epistemological components construing Record stages, a more comprehensive recount includes more evaluative information. To make a recount more

comprehensive, RCT report writers can choose to include Compliance and/or External involvement. Finally, an even more comprehensive recount supplants one or more of its epistemological components with a lower-order embedded methodology recount, which can include Intervention protocol, Standardisation, and/or Power calculation.

Chapter 5 Conclusion

The goal of this SFL-informed study was to investigate a linguistic construction of a sound scientific base for medical knowledge extension. Specifically, it focused on a genre-based deconstruction of Introductions and Methods in recently published clinical psychology RCT reports.

This chapter summarises the empirical findings (Section 5.1) and theoretical contributions (Section 5.2) of this thesis. This is followed by an overview of the pedagogical implications (Section 5.3) and suggestions for further research (Section 5.4).

5.1 Summary of empirical findings

The main contribution of this thesis is a multi-stratal and multi-functional SFL description of Introductions and Methods in clinical psychology RCT reports. According to the CONSORT Statement, the "pre-Results" RCT report sections must demonstrate that the reported trial is justified and that its methodology is ethical, scientifically rigorous, and credible (Moher et al., 2010; Schulz et al., 2010). In the field of clinical psychology, Chapters 3 and 4 revealed that trial justification and scientificity are construed through embedded research warrants and methodology recounts, which function as Introduction and Methods stages.

5.1.1 A linguistic construction of trial justification in clinical psychology RCT report Introductions

In Chapter 3, research warrants were identified as argumentative research genres with the following stage configuration: Topic significance ^ Evidence$^{1/2}$ ^ Response. Functioning as RCT report Introduction, the embedded research warrant can be seen as macroTheme of the RCT report (cf. Introduction as macroTheme in undergraduate business reports in Szenes, 2017).

Following the preliminary study, the three stages were found to be realised by different types of generic component (see Fig. 5.1).
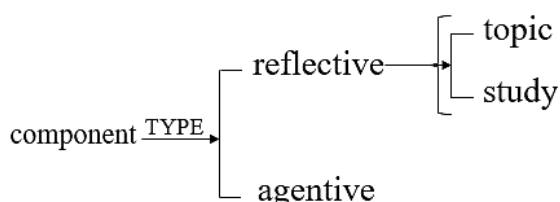
Figure 5.1: The proposed system network of generic component types in clinical psychology research warrants.

From the mode perspective, the entire research warrant is positioned closer to the reflection pole (cf. Martin & Rose, 2008). However, as the transition from Evidence to Response marks a slight shift towards the action pole, the first two components are classified as 'reflective',

whereas the last component is categorised as 'agentive' (see Fig. 5.1). The components can also be delineated with reference to field (cf. Doran & Martin, 2021; Hood, 2010; Humphrey & Hao, 2013). The reflective component construing Topic significance focuses on the object of study from a static field perspective (i.e., 'reflective: topic'). Also using a predominantly static perspective, the reflective component construing Evidence is concerned with the general field of study while continuing to build the object of study (i.e., 'reflective: study&topic'). Finally, the agentive component construing Response introduces the specific field of study (i.e., trial) from a predominantly dynamic perspective. From the perspective of tenor, the research warrant genre aims to provide a scientific justification of the trial. To this end, all components rally around the communal values such as *significance*, *relevance*, and/or *necessity*, which are assigned to the object and/or field of study.

To strengthen trial justification, the in-depth analysis revealed that RCT report writers: (a) supplant the reflective components with a number of embedded genres; and (b) use a wide range of strategies to saturate and/or intensify the evaluative prosodies of the report's object and field of study (cf. Hao & Humphrey, 2012; Hood, 2010; Hood & Martin, 2005; Humphrey & Hao, 2013). Modelled upon the empirical findings, Figure 5.2 presents an overview of the systemic options for structuring a clinical psychology research warrant.
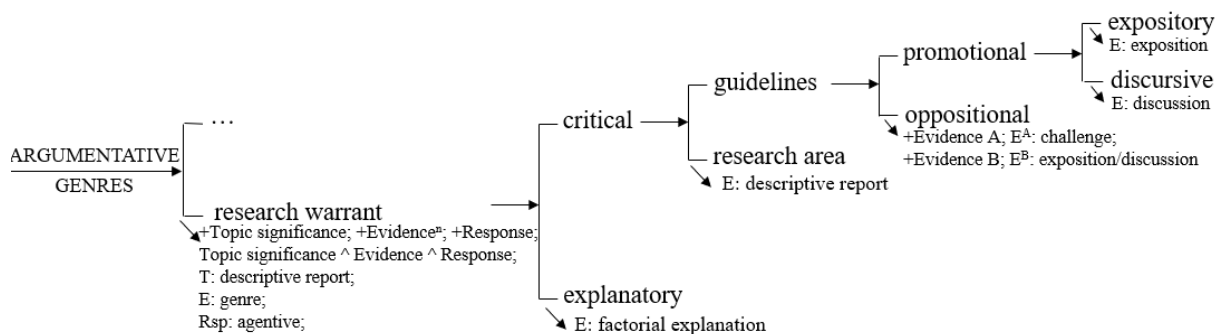
Figure 5.2: The generic structural potential of research warrants that function as the Introduction stage in clinical psychology RCT reports.

As shown in Figure 5.2, clinical psychology research warrants start with an embedded descriptive report functioning as Topic significance ($\searrow$ +*Topic significance* ^ *Evidence$^{1/2}$* ^ *Response; T: descriptive report*) (cf. Hood, 2010; Humphrey & Hao, 2013). Genre embedding enables the writer to define and describe the object of study through a Classification ^ Description stage configuration. While Classification was found to be optional, the obligatory Description stage elaborates on the disorder under investigation in terms of its symptoms/effects, prevalence, and treatments.

At the level of discourse semantics, Topic significance represents the macroTheme of the research warrant genre. Within the descriptive report, thematic prominence is given to the object of study. Ideationally, the stage is characterised by present tense state figures that form

correlations between the characteristic entity *disorder* and the observational activity/characteristic entities identified in the observed people (i.e., *behaviours/characteristics of those with the disorder*). Interpersonally, *descriptive* phases are oriented towards establishing, saturating, and/or intensifying topic significance using three complementary persuasion strategies. To begin with, amplified force and causality are used to saturate a negative prosody of the disorder. In addition, the affected population is quantified to emphasise the negative impact that the disorder has worldwide or on the specific area that is of high relevance for the RCT report. Lastly, writers either 'entertain' a positive prosody of a potential treatment or, more commonly, flag a negative prosody of a commonly sought treatment with the "slingshot" strategy. In the latter case, graduation and heteroglossic 'countering' are used to set up high expectations about the effectiveness of a treatment only to amplify how ineffective it actually is. In all three strategies, persuasion and objectivity are balanced by combining axi-tech, GRADUATION, and ENGAGEMENT to flag rather than inscribe ATTITUDE. Furthermore, 'reinforced assertions' are used to move from the authorial subjectivity to communal objectivity, while heteroglossic features are employed to acknowledge and manage alternative positions.

Having established topic significance, RCT report writers use an embedded genre as Evidence, which creates an important research gap by assessing the object and the general field of study (↘ +*E: genre* in Fig 5.2). In this case, genre embedding allows more room for negotiating the superiority of one line of research over the competing options. As illustrated in Figure 5.2, a broad distinction can be made between explanatory and critical research warrants. In explanatory warrants, Evidence is realised through an embedded factorial explanation (cf. biology research warrants in Humphrey & Hao, 2013). The generic structure of an explanatory research warrant is illustrated in Figure 5.3.
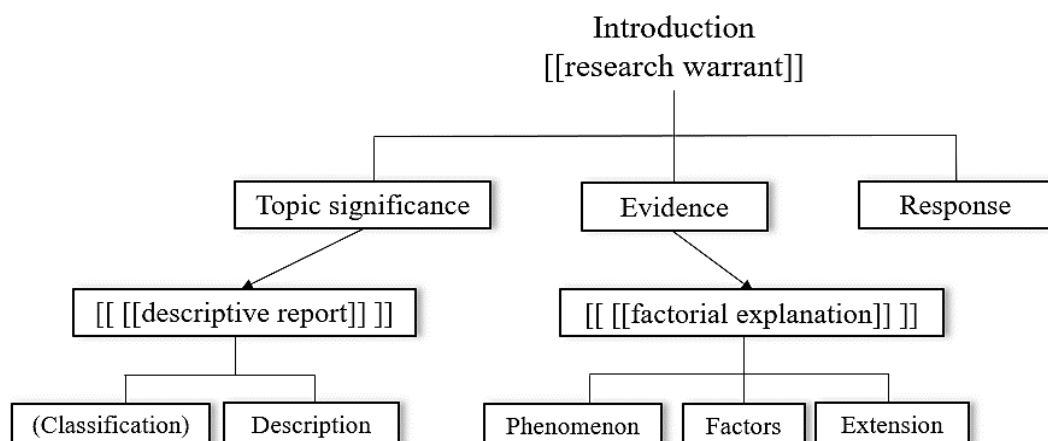
Figure 5.3: Generic structure of an explanatory research warrant.

Alternatively, the writer can choose a critical research warrant that focuses on: (a) a promising research area; or (b) the existing treatment guidelines. If reviewing a promising research area,

Evidence is construed by an embedded descriptive report that identifies and describes the general field of study, which is illustrated in Figure 5.4 (cf. Hood, 2010).
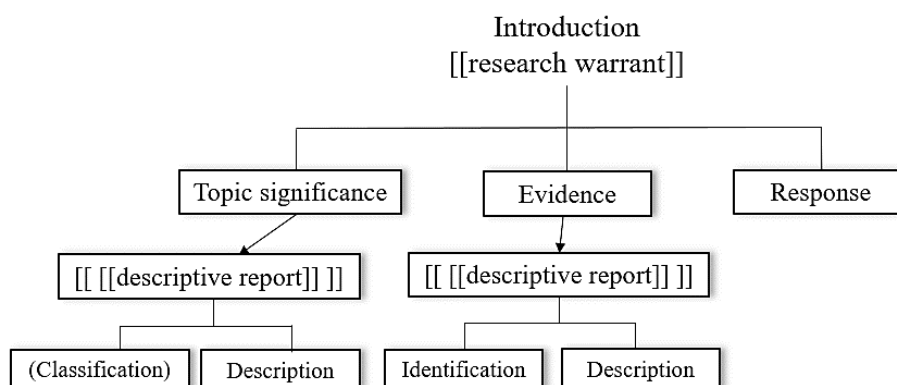
Figure 5.4: Generic structure of a critical (research area) research warrant.

If reviewing guidelines, the writers can opt for either promotion or opposition. In promotional warrants, Evidence can be construed by an embedded exposition or discussion. Figures 5.5 and 5.6 outline the sample generic structures of expository and discursive research warrants.
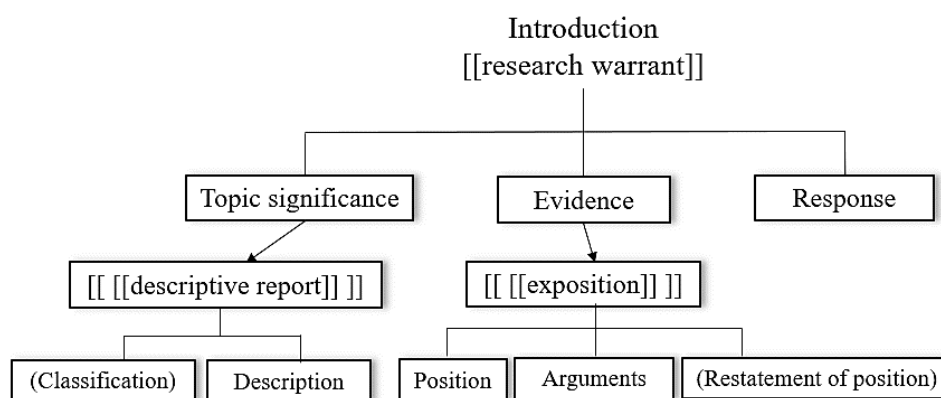
Figure 5.5: Generic structure of an expository research warrant.
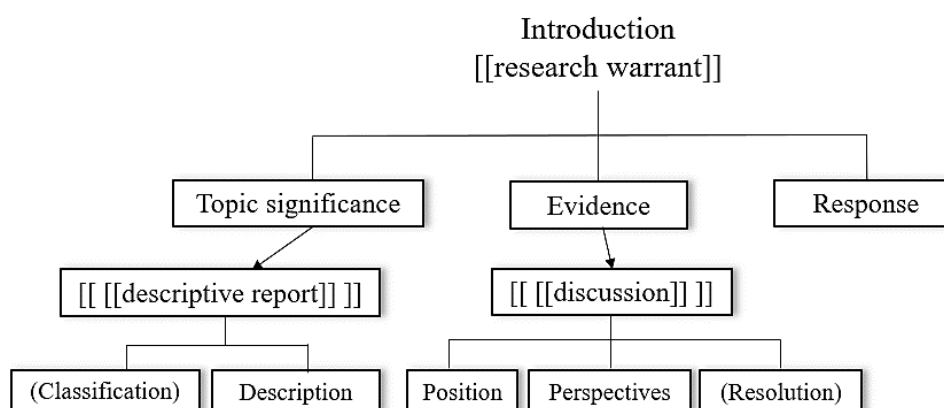
Figure 5.6: Generic structure of a discursive research warrant.

By contrast, an oppositional warrant starts with an embedded challenge functioning as Evidence A, which is followed by an embedded exposition or discussion as Evidence B. The generic structure of an oppositional research warrant is illustrated in Figure 5.7.
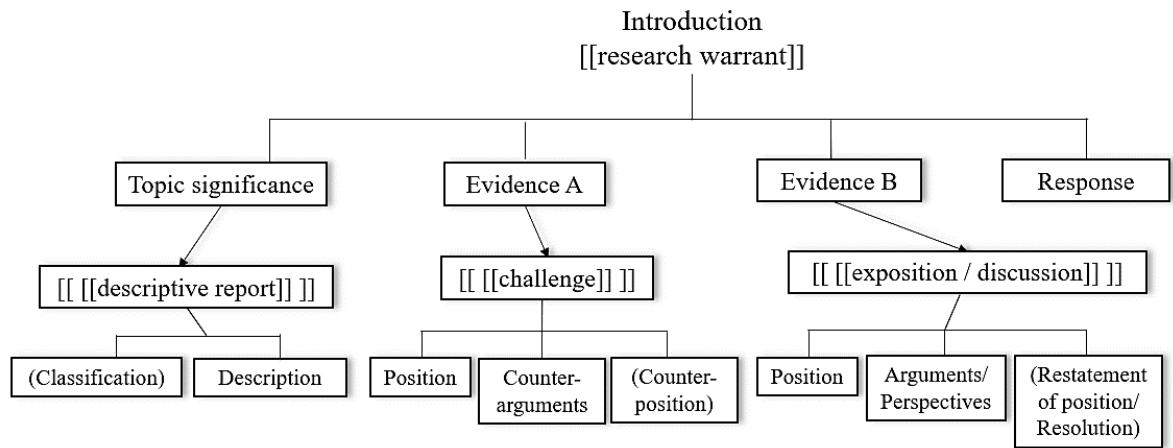
Figure 5.7: Generic structure of an oppositional research warrant.

Looking from "below", all Evidence realisations share many key language features. From a textual perspective, the opening stages in the embedded genres (Phenomenon, Identification, Position) function as macroThemes. Accordingly, these stages introduce experiential content and set the dominating evaluative prosodies of both the field and the object of study. The established prosodies are usually outsourced to either institutions (*view* phases) or publication/enacted activity entities (*burnishing* phases). To consolidate the experiential content and saturate the evaluative prosodies, the final stages in a factorial explanation or argumentative genres (Extension, Restatement of position, Counter-position) can be used as macroNew. Ideationally, Evidence realisations are characterised by positioned figures, which often give thematic prominence to the field of study as position sources. In explanatory warrants, positioned figures form causal sequences of present tense observational occurrences (*cause-effect* phases). Through internal concession, these sequences are accompanied by positioned state figures, which make attitudinal assessments about the reviewed phenomenon (*dispute/concede* phases) or position sources (*burnish/tarnish* phases). In critical warrants, positions usually augment the present tense extended state figures that assign qualities to the reviewed treatments (*dispute/concede* phases) and/or position sources (*descriptive* and *burnish/tarnish* phases). These positioned state figures are typically linked via internal concession or conclusion. Interpersonally, figure positioning and internal causality in Evidence stages are essential for an effective and "objective" trial justification. First, positioning enables the extra-vocalisation of attitudinal propositions through 'endorsement' or 'attribution'. Second, 'consequence: concession' and 'consequence: conclude' connexions are associated with 'countering' and 'justifying' resources, which can stop, reinstate, or saturate evaluative prosodies. Further contributing to the perception of objectivity, the evaluative prosody of the field of study is largely flagged through graduation resources (cf. Hood, 2010; Humphrey & Hao, 2013).

Having established topic significance and an important research gap, Response introduces the specific field of study (i.e., the reported RCT) as a logical course of action (cf. *Purpose*, *Hypothesis*, and *Objectives* in Humphrey & Hao, 2013). Its realisation through an agentive component enables the RCT report writer to transition from a reviewer role to that of an active participant in the process of building medical knowledge (↘ +*Rsp: agentive* in Fig 5.2).

From a discourse semantic perspective, Response represents the macroNew of the research warrant genre. More precisely, the reported trial is presented as warranted because it: (a) deals with a highly significant topic; and (b) addresses an important gap in the general field of study. Moreover, the hypotheses of the trial should be perceived as convincing given the reviewed evidence. Logically, Response is linked to the previous stages via internal causality (i.e., 'consequence: conclude/justify'), which is characteristic of argumentative genres (cf. Martin & Rose, 2008). Within the component, thematic prominence is frequently given to pronominal realisations of the observer entities, which foregrounds their agency and accountability. Ideationally, Response is characterised by a short temporal sequence of past tense enacted occurrences, which outlines the trial's purpose. This sequence can be described as the *steps* phase, construing the facilitation activity series. The *steps* are usually accompanied by the *hypothesis* phase, which uses positioned and modalised extended state figures to 'entertain' the positive outcomes of the trial. Interpersonally, internal causality serves as a heteroglossic 'justification' of the trial, which saturates the positive prosody of the specific field of study. Furthermore, the positioned extended figures saturate the positive prosody of the object of study via 'entertainment'. Ultimately, the use of heteroglossia in both cases implies that the established prosodies still need to be negotiated, which seals the entire research warrant.

5.1.2 A linguistic construction of trial scientificity in clinical psychology RCT report Methods

In Chapter 4, methodology recounts were identified as procedural research genres (cf. Nesi & Gardner, 2012). Functioning as RCT report Methods, the embedded recount specifies the methodology of the trial that was introduced in the Response stage of the preceding research warrant.

Looking from "below" at the 'action↔reflection' variation in mode, the position of methodology recounts is comparable to that of the agentive component in research warrants. That is, methodology recounts are closer to the reflection pole as written academic texts, yet less so than the reflective components in research warrants. From the field perspective, they continue building the RCT as the specific field of study. As far as tenor is concerned, recounts are oriented towards demonstrating ethics, scientific rigour, and credibility of the adopted methodology.

As shown in Figure 5.8, methodology recount stages were found to be realised by generic components that foreground either mode ('orientational'), field ('epistemological'), or tenor ('attitudinal').
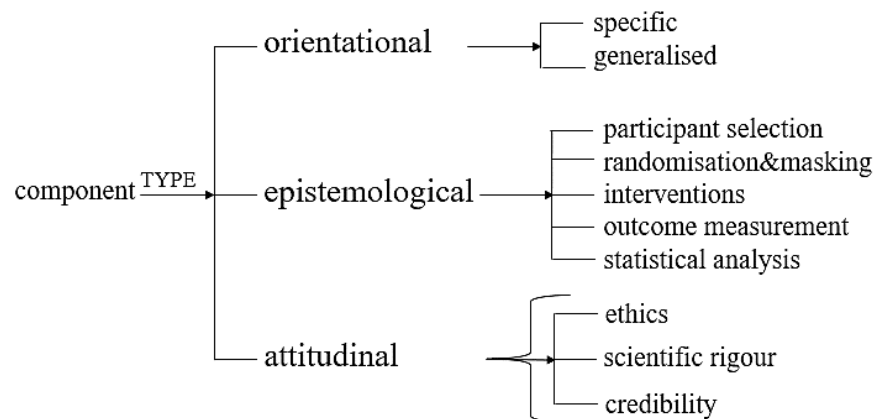
Figure 5.8: The proposed system network of generic component types in clinical psychology methodology recounts.

The purpose of an orientational component is to define and contextualise the method before proceeding to more detailed Record stages. A more delicate distinction can be made between specific and generalised orientational components, depending on whether they define a study-specific or an established methodology (see Fig 5.8). In methodology recounts functioning as Methods, specific orientational components were found to function as Study design stages. In lower-order embedded methodology recounts, it was revealed that generalised orientational components can serve as Intervention protocol stages.

The goal of epistemological components, which function as obligatory Record stages, is to moment the itemised activity *RCT*. Since each epistemological component further moments a particular part of the RCT methodology, more delicate component types include 'participant selection', 'randomisation&masking', 'interventions', 'outcome measurement', and 'statistical analysis' (see Fig. 5.8).

Finally, RCT report writers may opt to include attitudinal components that rally around the communal values of ethics, scientific rigour and/or credibility (see Fig. 5.8). Among the methodology recounts functioning as Methods, these components can function as two stages: Compliance ('ethics & scientific rigour & credibility') and External involvement ('ethics & credibility'). In lower-order embedded methodology recounts, attitudinal ('scientific rigour & credibility') components were found to realise Standardisation and Power calculation stages.

To construe trial scientificity through Methods, the study showed that writers embed methodology recounts that comprise five epistemological Record stages. The Record series can be accompanied by an orientational Study design, attitudinal Compliance, and/or attitudinal External involvement. Modelled upon the findings of this study, Figure 5.9 illustrates the

systemic options for structuring a methodology recount that functions as the Methods stage in a clinical psychology RCT report.
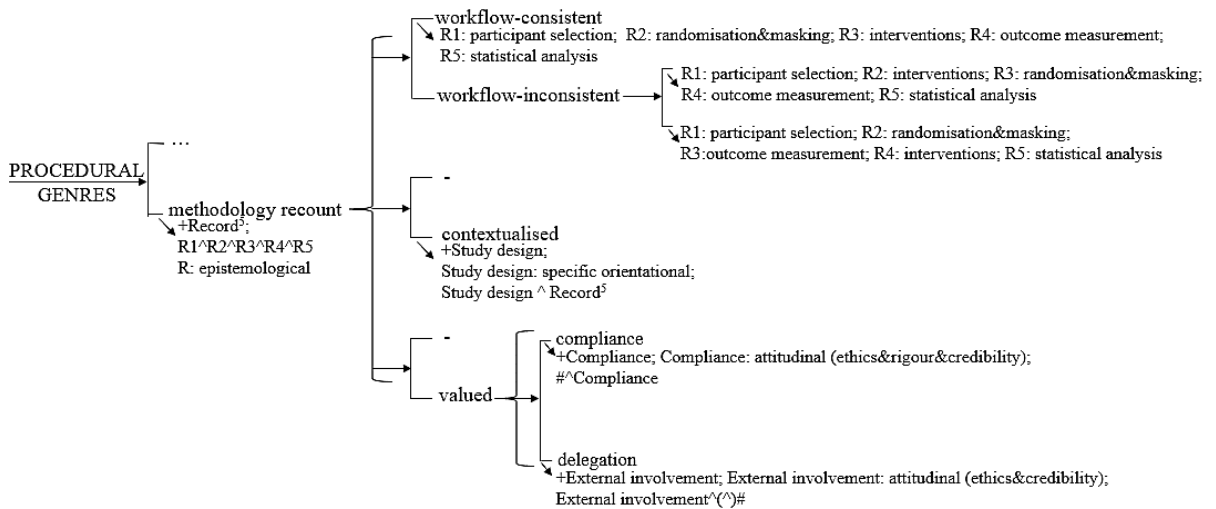
Figure 5.9: The generic structural potential of methodology recounts that function as the Methods stage in clinical psychology RCT reports.

Depending on the organisation of epistemological components (↘ +R^5; R1 ^ R2 ^ R3 ^ R4 ^ R5; R: epistemological), Methods can be realised by methodology recounts that are either 'workflow-consistent' or 'workflow-inconsistent' (see Fig. 5.9). In workflow-consistent recounts, the components realising the Record stages appear in the same order as they are found in the RCT flowchart (see [Section 1.2](#)). Alternatively, workflow-inconsistent recounts can swap the positions of: (a) randomisation&masking and interventions; or (b) interventions and outcome measurement. In this dataset, workflow-consistent methodology recounts account for the majority of realisations (73%). To contextualise the methodology recount, the writer may precede the Record stages with an orientational Study design (↘ *Study design* ^ R^5). Lastly, the methodology recount can be 'valued' with reference to 'compliance' and/or responsibility of 'delegation' by starting with Compliance (↘ *+Compliance; #^Compliance*) and/or including External involvement as the final/penultimate stage (↘ *+External involvement; External involvement^(^)#*).

As all epistemological components foreground the specific field of study, they share many key ideational features. First and foremost, they are characterised by temporal sequences that construe facilitation activity series momenting an RCT activity (*steps* phase). More precisely, external 'time: successive' and 'consequence: purpose/means' connexions are used to link past tense enacted occurrence figures. The orbital figure configurations typically involve observers as facilitators, and instrumental things or enacted activities as facilitatory entities. To add specificity, the figures are often situated or distributed with reference to time and/or place. Within the temporal sequences, internal 'consequence: justify' connexions can be used to link an enacted occurrence to a positioned state figure. Interpersonally, this carries two important

implications. First, it provides reasoning, enabling the writer to negotiate the positive value of a given *step* through heteroglossic 'justification'. Second, the justifying state figures frequently contain inscribed '+valuation' of the facilitatory entity, which is pushed to the domain of communal objectivity through extra-vocalised 'endorsement' or 'attribution'. In general, positive prosodies of the facilitated activities are saturated by targeting facilitators with '+capacity/+veracity' (e.g., *trained/unbiased*) and facilitatory entities with '+valuation/+composition' (e.g., *reliable/balanced*). In a vast majority of cases, '+capacity' is flagged by sharpening the focus of the observers' training (e.g., *CBT therapists*), while '+veracity' is flagged by up-scaling their spatial distance relative to the trial personnel (e.g., *independent assessor*). Similarly, '+valuation' of the facilitatory entities can be flagged by sharpening the focus of their intended purpose (e.g., *BDD questionnaire*). In the activity construal of *randomisation&masking* and *statistical analysis*, the minimisation of bias can also be indicated through non-human agency (e.g., *a computer-based system allocated…*).

In addition to temporal sequencing, some epistemological components can contain causal sequences that construe regulated activity series (*principles* phase). From an interpersonal perspective, regulated activities are important because they can indicate scientific rigour. In the activity construal of *randomisation&masking*, causal sequences use 'consequence: condition' connexions to outline contingency plans for any accidental occurrences of *unmasking*. To downplay any potential concerns about the integrity of either *blinding* and/or *protocol adherence*, these sequences are frequently used in conjunction with heteroglossic 'denial' (e.g., *there were no deviations*). Furthermore, the activity construal of *participant selection* typically involves a causal sequence that employs 'consequence: condition' connexions to link the observational occurrences and/or characteristics to the enacted occurrence of *including/excluding participants*. In this case, the regulated activity series can also be realised through study-specific definitions of *participants* or *exclusion/inclusion criteria* (e.g., *participants/exclusion criteria were…*). The construal of regulated activities through study-specific definitions is also characteristic of the *outcome measurement* component, which uses past tense state figures to co-elaborate the semiotic entity *outcome* with the observational activity/characteristic entities (e.g., *response/anxiety*). Arguably, the decision to shift the focus from dynamic causal sequences to static definitions can be explained by the fact that clearly defined eligibility criteria and outcome measures represent the basis for determining the external validity of the trial (Moher et al., 2010).

As macroTheme, the specific orientational component functioning as Study design summarises the overall methodology and establishes a dominating positive prosody. Ideationally, this can be achieved through a single past tense co-elaborating figure providing a study-specific definition of the enacted activity entity *RCT* (*definition* phase). In this instance,

the classification of the study design as an *RCT* ("the gold standard") affords '+valuation' of the adopted methodology. Furthermore, the *definition* can be unpacked through a temporal sequence of enacted activities, which construes a facilitation series momenting the RCT (*steps* phase). By sequencing RCT occurrences, the steps "predict" the subsequent textual organisation of the Record stages, which is largely scaffolded with sub-headings. In addition, the *steps* can be interspersed with evaluative *comment* phases, which contain heteroglossic attitudinal propositions that negotiate the positive value of the methodology in a more explicit manner.

By including Compliance as the initial stage, it is possible to foreground the axiological aspect of the RCT methodology, thus establishing a dominating positive prosody more explicitly. The Compliance stage is concerned with the documents and assurances that demonstrate the RCT standard for treatment evaluation and reporting. Typically, this is realised through a list of attitudinal propositions that evaluate the enacted activity entity *study* or the semiotic locution *report* (*comment* phases). Compared to the Record stages, Compliance tends to employ more explicit evaluative strategies, using Appraising tokens such as *approved*, *safe*, or *confidential* to inscribe '+valuation' of the study. To balance persuasion and objectivity, the writer uses authoritative institutions as external Appraisers. Interestingly, however, the strategic use of ideational resources enables this stage to assert rather than negotiate study compliance. Instead of using figure positioning, the writers opt for figure configurations that involve occurrences such as *approve* or semiotic locutions such as *a certificate of confidentiality*, which externalise the positive study assessment without the involvement of heteroglossia.

Similarly, the goal of the External involvement stage is to demonstrate the ethics and credibility of the study by specifying the quantity and quality of external involvement. Ideationally, this was found to be realised by a list of past tense figures with occurrences that entail external assessment (*comment* phases) or contribution (*contribution* phase). Furthermore, figure instigation can be used to construe observer entities as decision-makers (i.e., instigators). From an interpersonal perspective, there seem to be two complementary strategies involving the use of GRADUATION and ENGAGEMENT. On the one hand, the writers may sharpen the specificity of the Appraising/contributing institutions to flag '+valuation' of their involvement. In this case, the contributions tend to be amplified, while the assessments are used for heteroglossic 'attribution'. On the other hand, the writers can down-scale or 'deny' any involvement of the funding institutions or observed people, fending off potential concerns regarding the trial's ethics or credibility.

The analysis of the narrowed dataset showed that the writers can zoom in on the context and/or values pertinent to a specific RCT activity by supplanting the corresponding epistemological component with a lower-order embedded methodology recount. In this instance,

genre embedding expands the meaning potential of Record stages, opening more space for convincing the medical community of the trial's scientificity.

In the embedded recounts momenting interventions, it was found that Records can be preceded by Intervention protocol (see Fig. 5.10).
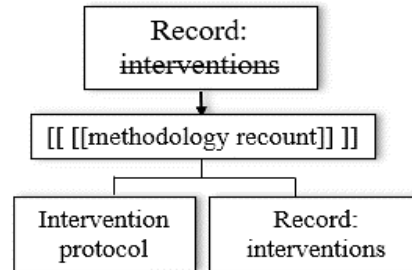
Figure 5.10: Intervention protocol in a second-order embedded methodology recount supplanting the interventions component.

The aim of an orientational Intervention protocol (i.e., macroTheme) is to identify and evaluate the set of principles underpinning the performed interventions. Ideationally, this can be realised through a present tense co-elaborated state figure that provides a generalised definition of the enacted activity entity *intervention* (*definition* phase). In this case, the positive prosody is established implicitly by referencing trial-external publication entities, indicating an established protocol. The ideational meanings can be expanded through additional entity co-elaborations that set up compositional taxonomies (*description* phase). Furthermore, the *definition* can be unpacked through a regulated activity series (*principles* phase), which is construed by a causal sequence of obligatory occurrences linked via 'consequence: purpose'. Like Record stages, Protocol employs regulated activity series to indicate scientific rigour. To make the evaluation of the protocol even more explicit, the writer may include extra-vocalised attitudinal propositions (*comment* phases) that inscribe '+valuation' (e.g., *has been validated*).

As illustrated in Figure 5.11, Standardisation can be included as the final stage in the embedded recounts that moment participant selection, interventions, or outcome measurement.
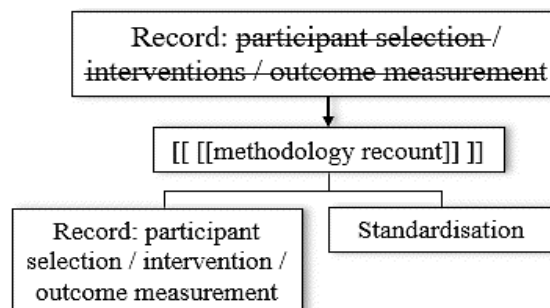
Figure 5.11: Standardisation in a second-order embedded methodology recounts supplanting a participant selection, interventions, or outcome measurement component.

The aim of Standardisation as an attitudinal (scientific rigour & credibility) component is to demonstrate that the RCT activities were performed proficiently and consistently. At the

discourse semantic level, this is typically achieved by providing a study-specific definition of facilitators to specify the nature and extent of their training (*definition* phase). Interpersonally, the specificity and quantity of training are employed to intensify the facilitators' '+capacity'. To demonstrate consistency and protocol adherence, the writer can also list the enacted occurrence figures that introduce additional observers such as *supervisors* or *reviewers* (*comment* phases). Ultimately, the positive prosody of the facilitated enacted activity can be saturated through temporal sequences that construe attitudinally oriented facilitation series (*steps* phase). In this phase, 'consequence: purpose/means' connexions are employed to link a sequence of enacted occurrences to the instigation of *reliability* and/or *consistency*.

Lastly, it was found that the embedded methodology recounts momenting statistical analysis precede Record with Power calculation (see Fig. 5.12).
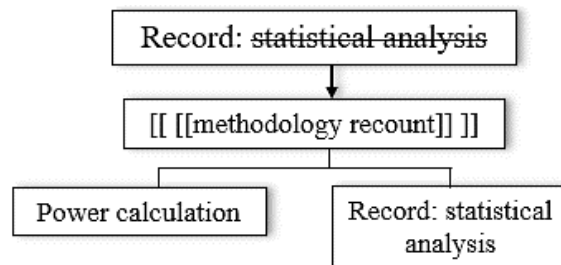
Figure 5.12: Power calculation in a second-order embedded methodology recount supplanting a 'statistical analysis' component.

Power calculation is realised by an attitudinal (scientific rigour & credibility) component aimed at demonstrating the internal validity of the statistical analysis. Like Standardisation, this stage typically relies on temporal sequences that construe attitudinally oriented facilitation activity series (*steps* phase). In this case, 'consequence: purpose' is used to connect the *steps* for determining the sample size to the instigation of a sufficient statistical power. To negotiate the adequacy of the power calculation, writers often use a combination of heteroglossic 'justification' and 'endorsement'/'attribution'.

Based on the generic and discourse semantic features reviewed above, Chapter 4 offered a complementary topological view on methodology recounts using the 'synoptic↔comprehensive' cline (cf. Bloor, 1999; Nesi & Gardner, 2012; Swales, 2004).
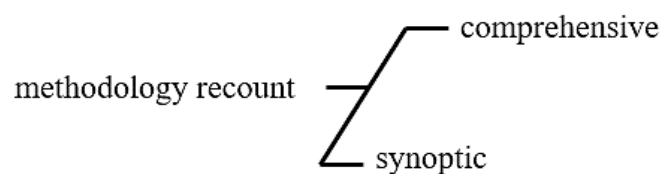
Figure 5.13: The cline between synoptic and comprehensive methodology recounts functioning as Methods in clinical psychology RCT reports.

As far as the obligatory Record stages are concerned, it was found that the comprehensiveness of methodology recounts correlates with the amount of included evaluation. In addition, it was discovered that the recounts can be made more comprehensive by adding attitudinal components and/or expanding the meaning potential of epistemological components through genre embedding.

5.2 Summary of theoretical contributions

The empirical findings of this study were used to contribute to the development of "Sydney school" genre theory and ideational discourse semantics.

5.2.1 The development of the "Sydney School" approach to generic structure

Chapter 2 revisited Rose's (2006) segmental modelling of genre-stage-phase relations along a discourse semantic rank scale. Although this thesis has adopted the concept of phases as discourse semantic strategies, Rose's discourse semantic scale was found to be problematic as it involves structural layers of text that are defined at different levels of abstraction (i.e., strata). In response to this issue, this thesis has introduced a generic scale with two unit ranks: genre and component. Following Martin (2013), this scale is based on the intra-stratal organisation of class-function cycles (see Fig. 5.14).
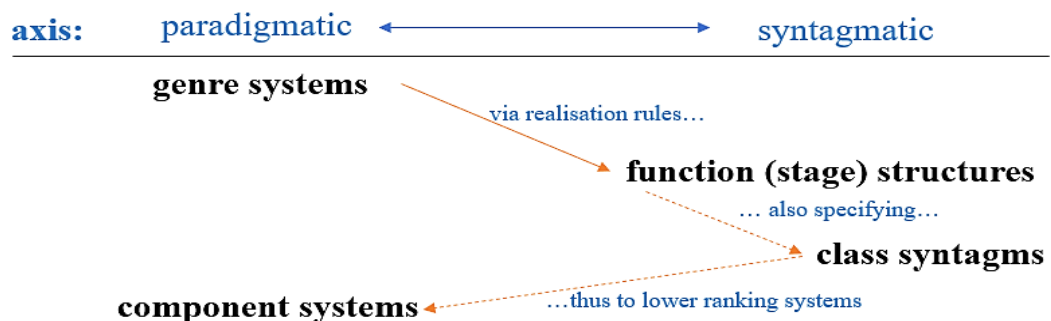
Figure 5.14: System-structure cycles at genre and component ranks.

As illustrated in Figure 5.14, genres (e.g., research warrants) are represented through their functional configurations (e.g., ↘ Topic significance ^ Evidence ^ Response). Then, the genre-rank functions (i.e., stages) are realised by classes of the unit rank next below – namely, components (e.g., ↘ Response: agentive).

The introduction of the generic rank scale contributes significantly to "Sydney School" research on longer pieces of writing. As the concept of rank scale underpins the phenomenon of rank-shift, it strengthens Martin's (1994, 1995, 1996) and Szenes' (2017) argument for genre embedding as a means for expanding the meaning potential of genres. Put simply, for embedding to be possible, there needs to be a non-embedding alternative for each stage where embedding is proposed (J. R. Martin, personal communication, September 1, 2020).

Furthermore, the concept of supplanting a component with an embedded genre goes hand in hand with the pedagogical aim of expanding the ontogenetic meaning potential of higher degree research students. More precisely, it provides language educators and students with the tools to model genres and components at the same level of abstraction. This in turn allows a discussion on how students can expand the meaning potential of a critical component (e.g., Evidence in research warrants) by building upon their existing knowledge of school genres. This pedagogical implication is further discussed in Section 5.3.

5.2.2 The extension of ideational discourse semantics

Drawing upon Hao's (2020a) tri-stratal approach to modelling ideational discourse semantic resources in scientific discourse, Chapter 2 used empirical data to develop a typology of entities, figures, and sequences in clinical psychology RCT reports. Thus, by building on Hao's (2015, 2020a, 2020b) recently developed typologies in the field of biology experiment reports, this thesis has extended the description of ideational resources in experimental research discourses.

Based on the empirical findings of this study, Figure 5.15 outlines an extended system network of entity types in experimental research discourses, with extensions to Hao's (2020a) model highlighted.
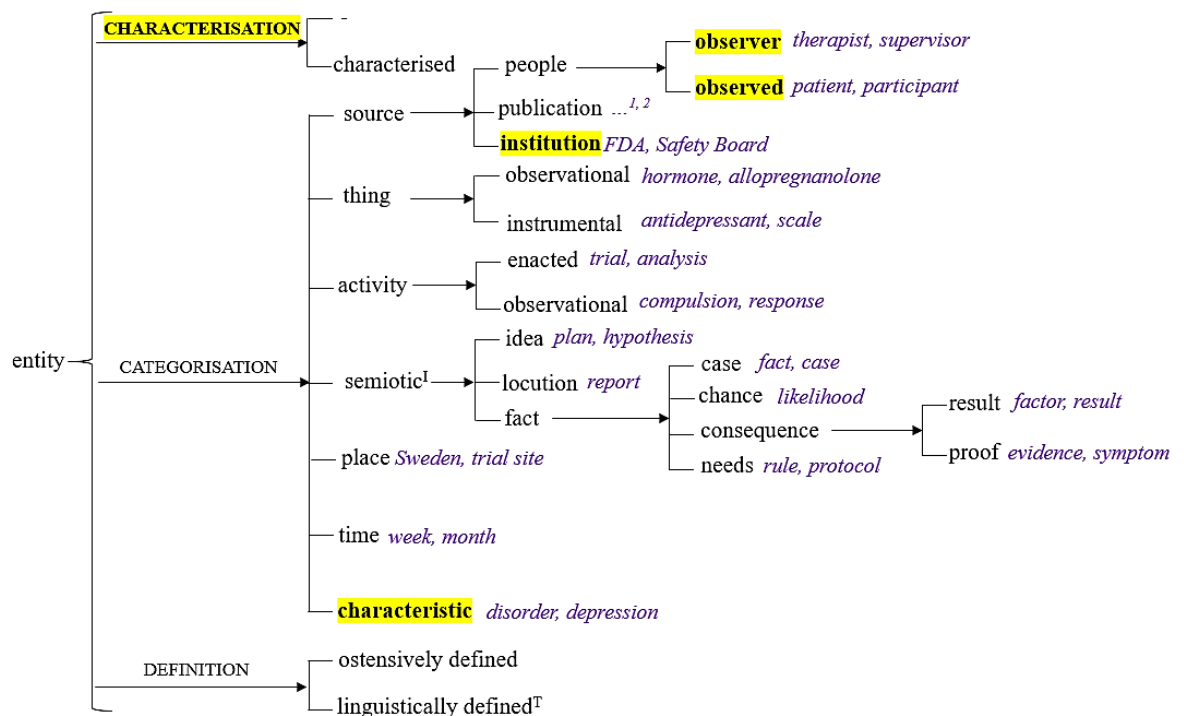
Figure 5.15: The extended system network of entity types in experimental research discourses (building on Hao, 2020a, p. 90).

When it comes to the CATEGORISATION subsystem, this thesis proposes a more delicate typology of people entities and the inclusion of institutional source and characteristic entities

(highlighted in Fig. 5.15). Looking from "above", these system extensions account for the experimental research subfields that:

- involve governing bodies and/or human participation (e.g., *clinical trials*); and/or
- focus on distilled itemised properties as the object of study (e.g., *depression* in clinical psychology).

Looking from "below", the identification of new categories is motivated by their different grammatical realisations. In behavioural processes, for instance, observers and observed people entities tend to be realised as Behavers and Phenomenon-like participants, respectively. Looking from "around", the added entity types interact with ideational and interpersonal resources in different ways. Observed people co-elaborate with characteristic entities, initiate observational occurrences, and are typically related to qualities that express 'affect'. Concurrently, characteristic entities correlate with observational activity entities. By contrast, observers initiate enacted occurrences, which makes them subject to 'judgement' in terms of 'capacity'. Furthermore, although both observers and institutions contribute to enacted occurrences, observers are predominantly responsible for facilitation, whereas institutions tend to be in charge of quality control.

As highlighted in Figure 5.15, this research has also introduced CHARACTERISATION as one of the entity type subsystems. At the field level, the process of characterisation serves to deepen taxonomies through subclassification. If characterised, entities subsume the meanings of

- another characterising entity (e.g., <u>*CBT*</u> *therapist*); or
- characteristics that
  - o construe 'spatio-temporal' properties (e.g., <u>*26-week*</u> *trial*); or
  - o are distilled from 'qualitative' properties (*(clinically)* <u>*depressed*</u> *person*).

At the lexicogrammatical level, characterised entities are realised through nominal groups structured as Classifier ^ Thing (e.g., *CBT therapist*) or Possessive Deictic ^ Thing (e.g., *Hochberg's method*). In the Classifier ^ Thing structure, the Thing can be omitted if the nominal group functions as an adjectival Attribute in relational clauses (e.g., *they were <u>eligible</u>*).

Furthermore, the concept of entity characterisation offers a deeper understanding into the phenomenon of distilling properties as characteristics in disciplinary fields such as clinical psychology. Specifically, while everyday discourses realise properties such as *depressed* through qualities that extend entities (e.g., *depressed + people*), clinical psychology discourse defines the meaning of *depressed*, which characterises entities through elaboration (e.g., *(clinically) depressed = people*). Looking from "around", qualities such as *depressed* are attitudinal ('-affect'), whereas characteristics such as *depressed* represent axiologically charged

technicality (i.e., axi-tech). Looking from "below" at the nominal group level, qualities are realised through Epithets, whereas characteristics are realised through Classifiers.

Drawing on Hao's (2020a) modelling of discourse semantic figures, Chapter 2 also proposed a system network of figures in clinical psychology. In this instance, the empirical findings were used as the basis for extending the typology of state figures in experimental research discourses (see Fig. 5.16).
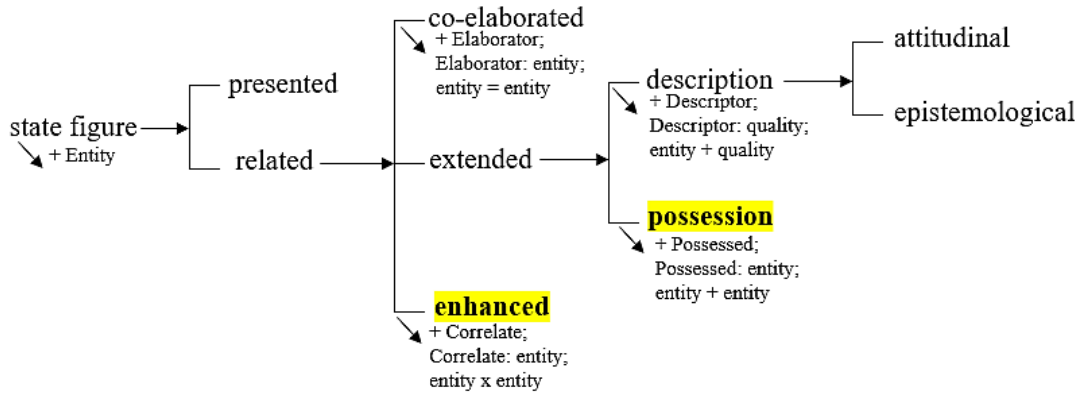
Figure 5.16: The extended system network of state figures in experimental research discourses (building on Hao, 2020a, p. 94).

As highlighted in Figure 5.16, this thesis proposes a more delicate typology of extended state figures and the introduction of enhanced state figures. Looking from "above" and "below", these system extensions are motivated by Doran and Martin's (2021) model of field interdependency, which in turn builds on Halliday and Matthiessen's (2014) logico-semantic relations of elaboration (=), extension (+), and enhancement (x). From "around", two types of extending figures can be distinguished with reference to the elements they relate. Specifically, description extends entities using descriptive qualities (entity + quality), while possession extends entities by introducing a possessed entity (entity + entity).

Following Hao (2015, 2020a), this study adopted a tabular orbital representation of figure configurations and their lexicogrammatical clause-level realisations (see Tables 5.1 and 5.2).

Table 5.1: Orbital structure of an extended (possession) state figure and its lexicogrammatical clause-level realisation.

	nucleus		
	centre		
discourse semantics	entity	+ entity	
(5.1)	*participants*	*had*	*a new email*
lexicogrammar	Medium/Carrier	Process: attributive (poss.)	Range/Attribute
	nominal group	verbal group	nominal group

Table 5.2: Orbital structure of enhanced state figures and their lexicogrammatical clause-level realisations.

	inner orbit			
	nucleus			
	centre		**margin**	**periphery**
discourse semantics	entity			x entity
(5.2)	*BDD*			*is associated with* / *functional impairment*
(5.3)	*Treatment*			*lasted* / *12 weeks*
lexicogrammar	Token (5.2) / Carrier (5.3)			P: identifying (5.2) / attributive (5.3) (circ.) / Value (5.2) / Attribute (5.3)
	nominal group			verbal group / nominal gr.

For instance, Tables 5.1-2 demonstrate typical clause-level realisations of extended possession and enhanced figures. As both represent subtypes of state figures, it is also possible for them to be congruently realised at the nominal group level (cf. Hao, 2020a). Possession figures can be congruently realised through Possessive Deictic ^ Thing structures (e.g., *participant's new email*), while enhanced figures can be realised through Thing ^ Qualifier structures (e.g., *functional impairment in BDD*, *treatment of 12 weeks*).

Lastly, Chapter 2 built upon Hao's (2020a) modelling of temporal and causal connexions to identify types of sequencing in RCT report Introductions and Methods. Then, following Doran and Martin (2021), the identified sequences were used to describe the construal of activities at the field level. In addition to facilitation and reasoning, which were also found in Hao's sample of biology experiment reports, this empirical enquiry identified more delicate options that describe consequential activity relations in experimental research discourses. As shown in Table 5.3, these relations underpin regulated and implicated activities.

Table 5.3: Types of consequentially momented activities and their discourse semantic realisations (building on Hao, 2020a, p. 158).

Types of activities		**Discourse semantic realisations**	**Examples**
regulated	momented	causal sequence (modulating enacted occurrence activities)	*Women were excluded **if** they were pregnant **or if** they declined to use an effective birth-control method.*
		state figure (co-elaborating entities: enacted activity, observational activity/characteristic)	*Outcome measure was BDD II score of less than 10..*
	unmomented	semiotic (needs) entity	*protocol, criterion*
implicated	momented	causal sequence (observational occurrence figures)	***If** GABAA receptors fail to adapt to these changes at partuition, post-partum depression is **triggered**.*
	unmomented	observational activity, characteristic, or semiotic (results) entity	*compulsion, post-partum depression, findings*

Inspired by Martin's (1992) concept of activity modulation, this thesis proposes that regulated and implicated activities should be distinguished with reference to the nature of

phenomena they modulate. On the one hand, causal sequences can construe implicated activities, which explain natural phenomena through the laws of nature (e.g., *post-partum depression* in Table 5.3). If implicated activities are unmomented, they can be realised through reconstrued observational activity/characteristic entities or semiotic results (Hao, 2020a also, see Table 5.3). On the other hand, causal sequences can construe regulated activity series, which rely on artificial rules to modulate social phenomena (e.g., *participant selection* in Table 5.3). If regulated activities are unmomented, they can be realised through semiotic needs (e.g., *protocol* in Table 5.3). At the genre level, implication series are associated with scientific explanations (Martin & Rose, 2008; Rose & Martin, 2012; Unsworth, 2001), while regulated activities are closely related to scientific protocols (Martin & Rose, 2008).

5.3 Pedagogical implications

One of the reasons for adopting the "Sydney School" approach to genre in this thesis is its proven applicability to scaffolding literacy in academic environments (e.g., Dreyfus et al., 2015; Humphrey, Martin, Dreyfus, & Mahboob, 2010; Rose & Martin, 2012). As indicated in Chapter 1, "Sydney School" researchers have developed the Teaching-Learning-Cycle (TLC), which consists of three stages: Deconstruction, Joint construction, and Independent construction (e.g., Rothery, 1994; Rothery & Stenglin, 1994). This study carries important implications for the Deconstruction stage, which uses a genre-based investigation of model texts to familiarise students with the intricacies of meaning-making mechanisms. More precisely, the findings of this thesis can be recontextualised to develop the writing skills of clinical researchers that specialise in mental health.

As demonstrated in Chapters 3 and 4, the successful construal of trial justification and scientificity in RCT report Introductions and Methods depends on mastering the multilayered generic structures of research warrants and methodology recounts. Therefore, the nature of embedded genres and their role in expanding the meaning potential of the "big" texts should be made explicit to novice clinical researchers.

To convince the medical discourse community of the appropriateness of their ***action***, the writer must ***reflect*** critically on the object and the general field of study. For the readers to be able to ascertain topic significance, research warrants should first ***report*** on the impact that the disorder under investigation has on the society. Specifically, it is essential that the writer ***describe*** and, if necessary, ***define*** the disorder with reference to its the symptoms/effects, prevalence, and common treatments. Linguistically, this can be achieved by starting the research warrant with an embedded descriptive report on the object of study. Then, to provide a rationale for pursuing or abandoning a particular line of enquiry, the writer can:

- *argue for/against* the treatment guidelines by embedding expositions, discussions, and/or challenges;
- *explain* the biological factors triggering the disorder through an embedded factorial explanation; or
- *report* the important aspects of a promising line of research using an embedded descriptive report on the identified field of study.

In all three cases, the embedded genres should be oriented towards carving out an important research gap by identifying the strengths and weaknesses of: (a) the existing scholarship; and (b) the current evident-based treatments. Eventually, the specific field of study – the reported trial – needs to be introduced as a means for fulfilling the created gap.

Before proceeding to the results of the trial, the writer also needs to *define* the study design and demonstrate that the adopted methodology has met "the gold standard" for evaluating treatments. Therefore, a methodology recount must *inform* the readership on *how* the trial was performed to allow future replications and demonstrate its ethics, scientific rigour, and credibility. More precisely, a methodology must focus on the *epistemology* of the knowledge building process by providing a detailed record of the methodological steps. At the same time, it is highly desirable that the recount disclose any additional information that can position the reader to adopt a positive *attitude* towards the reported trial. This may include the information on the obtained approvals or external involvement. Furthermore, the writers may choose to expand the attitudinal meaning potential of predominantly epistemological components by supplanting them with another layer of embedded methodology recounts. In these instances, it is possible to zoom in on the scientific rigour and credibility of individual RCT activities by elaborating on the established intervention protocols, undertaken standardisation measures, and/or the process of power calculation.

As highlighted above, the concept of genre embedding can be used to make explicit links between the students' existing knowledge of science genres and the construal of a sound scientific base in clinical psychology RCT reports. In other words, it is strongly recommended that educators draw on students' pre-tertiary science literacy education with reference to *reporting*, *arguing*, *explanatory*, and *procedural* ("*how-to*") genres (see Rose & Martin, 2012).

As mentioned in Chapter 2, a discourse semantic model of phases can be used to deconstruct the generic patterns at a lower level of abstraction (Dreyfus et al., 2015; Humphrey & Dreyfus, 2012; Humphrey et al., 2010; Rose, 2006; Rose & Martin, 2012). In this thesis, the identified generic patterns were found to be realised through 13 distinct phases, defined as language strategies combining ideational, interpersonal, and textual discourse semantic features. The 13 phases include *definition*, *description*, *view*, *burnishing*, *tarnishing*, *disputing*, *conceding*, *cause-effect*, *hypothesis*, *steps*, *comment*, *principles*, and *contribution* (for a multi-

functional description of the identified phases, see Appendix 11). Based on the findings of this research, Table 5.4 proposes a set of phase-specific questions, which can be used to focus discussions on the affordances of different discourse semantic strategies.

Table 5.4: Phases in clinical psychology RCT report Introductions and Methods: focus questions and distribution.

phase (i.e., discourse semantic strategy)	Focus question	The research warrant (RW) & methodology recount (MR) stages containing the phase
definition	*What/who is/was: (a) the disorder; (b) the method; (c) the participant; (d) the criterion; (e) the facilitator; or (f) the outcome measure?*	RW: Topic significance MR: Study design; Record; Intervention protocol; Standardisation
description	*What are the most important features of: (a) the disorder; (b) the method; or (c) the facilitator?*	RW: Topic significance MR: Record
view	*What does the medical community think about a treatment?*	RW: Evidence
burnishing	*What has the scholarship been able to demonstrate so far?*	RW: Evidence
tarnishing	*What are the limitations of the existing scholarship?*	RW: Evidence
disputing	*What are the drawbacks of the proposed treatment?*	RW: Evidence
conceding	*Why is the proposed treatment still worth testing?*	RW: Evidence
cause-effect	*What triggers the disorder?*	RW: Evidence
hypothesis	*What was hypothesised?*	RW: Response
steps	*How was the activity performed?*	RW: Evidence, Response MR: Study design; Record; Standardisation; Power calculation
comment	*What else should the reader know to appraise the method as ethical, rigorous, and/or credible?*	MR: Compliance, Study design, Record, External involvement, Intervention protocol
principles	*Which rules regulated the activity?*	MR: Record, Intervention protocol
contribution	*Who else contributed to the execution of the RCT (report) and how much?*	MR: External involvement

To link the strategies back to the generic patterns, the ideational, interpersonal, and textual aspects of a given phase should be interpreted with reference to the registerial variables of field, tenor, and mode. For instance, the question of "*How was the activity performed?*" can be used to focus a discussion on the temporal sequences of enacted occurrences (i.e., *steps*), which construe facilitated activity series. Concurrently, the affordances of these sequences in a given stage should be discussed with reference to the medical scientific register (e.g., adding specificity, justification, and evaluation).

During a discourse semantic deconstruction of model texts, special attention should be paid to the couplings of experiential and interpersonal resources so as to address the growing concerns about the writer's ability to balance objectivity and persuasion in RCT reports (see,

e.g., Millar et al., 2020, 2019). When construing trial justification and scientificity, it was found that the perception of "objectivity" in reporting mainly depends on the writer's ability to:

- flag an attitudinal reading of non-attitudinal lexis through a strategic use of graduation resources, including the use of quantification with axiologically charged technicality;
- extra-vocalise the instances of inscribed attitude; and
- specify the procedures for ensuring reliability and/or validity of the enacted activities.

A successful integration of the empirical findings into the TLC model would require establishing a **metalanguage** for talking about the construal of trial justification and scientificity through language. To make the SFL-informed description accessible to non-SFL literacy educators, this thesis recommends that future "Sydney School" interventions build upon the **3x3 toolkit** (see Table 5.5), which was developed to support the tutors in the SLATE (Scaffolding Literacy in Academic and Tertiary Environments) program (Dreyfus et al., 2015; Humphrey et al., 2010).

Table 5.5: Outline of 3 × 3 dimensions from the perspective of academic register (adapted from Dreyfus et al., 2015, p. 109).

Text levels Metafunctions	genre and register (whole text)	discourse semantics (phase)	lexicogrammar (clause, group, word)
ideational meanings	Resources for constructing specialised and formal knowledge of discipline area (field)		
interpersonal meanings	Resources for convincing the reader in critical yet authoritative ways (tenor)		
textual meanings	Resources for organising clearly scaffolded abstract texts (mode)		

As shown in Table 5.5, the 3x3 toolkit can be used to recontextualise the identified multi-stratal and multi-functional meaning patterns through a nine-square matrix.

5.4 Suggestions for further research

Based on its findings, this thesis suggests further research on meaning construal in clinical psychology RCT reports. To investigate a linguistic construction of a sound scientific base for medical knowledge extension, this thesis focused on the "pre-Results" RCT report sections. As demonstrated in Chapters 3 and 4, this inquiry yielded a nuanced SFL-description of the meaning-making resources involved in the construal of trial justification and scientificity. In the future, it would be useful to conduct a genre-based investigation of RCT report Results and Discussions to explore the process of transforming RCT observations into generalised medical knowledge.

The CONSORT Statement strongly recommends that RCT report writers accompany the presentation of findings with a diagram that shows the participant flow throughout the trial (Moher et al., 2010). Therefore, a genre-based analysis of RCT report Results would benefit from an SFL approach to multimodal discourse analysis, which is concerned with the meanings

arising from multiple semiotic resources (see, e.g., Doran, 2017; Dreyfus et al., 2011; Kress & van Leeuwen, 1996; O'Halloran, 2008).

Furthermore, the CONSORT Statement requires that RCT report Discussions negotiate the value of the specific field of study (i.e., trial limitations, potential bias, reliability, and external validity) as well as the object of study (i.e., balancing benefits and harms). Accordingly, a genre-based exploration of RCT report Discussions should pay special attention to the role of evaluative couplings in reconciling the need to inform objectively with the need to convince.

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Appendix 1 Dataset

RCT Code	Reference
BMJ-1*	**Enander, J., Andersson, E., Mataix-Cols, D., Lichtenstein, L., Alström, K., Andersson, G., … Rück, C. (2016). Therapist guided internet based cognitive behavioural therapy for body dysmorphic disorder: Single blind randomised controlled trial. *BMJ*, i241. https://doi.org/10.1136/bmj.i241**
BMJ-2	**Kessler, D. S., MacNeill, S. J., Tallon, D., Lewis, G., Peters, T. J., Hollingworth, W., … Wiles, N. J. (2018). Mirtazapine added to SSRIs or SNRIs for treatment resistant depression in primary care: Phase III randomised placebo controlled trial (MIR). *BMJ*, k4218. https://doi.org/10.1136/bmj.k4218**
JAMA-1	**Mohamed, S., Johnson, G. R., Chen, P., Hicks, P. B., Davis, L. L., Yoon, J., … Little, J. T. (2017). Effect of antidepressant switching vs augmentation on remission among patients with major depressive disorder unresponsive to antidepressant treatment: The VAST-D randomized clinical trial. *JAMA*, 318(2), 132–145. https://doi.org/10.1001/jama.2017.8036**
JAMA-2	**Foa, E. B., McLean, C. P., Zang, Y., Rosenfield, D., Yadin, E., Yarvis, J. S., … Peterson, A. L. (2018). Effect of prolonged exposure therapy delivered over 2 weeks vs 8 weeks vs present-centered therapy on PTSD symptom severity in military personnel: A randomized clinical trial. *JAMA*, 319(4), 354–364. https://doi.org/10.1001/jama.2017.21242**
JAMA-3	Gilbody, S., Lewis, H., Adamson, J., Atherton, K., Bailey, D., Birtwistle, J., … McMillan, D. (2017). Effect of collaborative care vs usual care on depressive symptoms in older adults with subthreshold depression: The CASPER randomized clinical trial. *JAMA*, 317(7), 728–737. https://doi.org/10.1001/jama.2017.0130
JAMA-4	Hedayati, S. S., Gregg, L. P., Carmody, T., Jain, N., Toups, M., Rush, A. J., … Trivedi, M. H. (2017). Effect of sertraline on depressive symptoms in patients with chronic kidney disease without dialysis dependence: The CAST randomized clinical trial. *JAMA*, 318(19), 1876–1890. https://doi.org/10.1001/jama.2017.17131
JAMA-5	Rahman, A., Hamdani, S. U., Awan, N. R., Bryant, R. A., Dawson, K. S., Khan, M. F., … van Ommeren, M. (2016). Effect of a multicomponent behavioral intervention in adults impaired by psychological distress in a conflict-affected area of Pakistan: A randomized clinical trial. *JAMA*, 316(24), 2609–2617. https://doi.org/10.1001/jama.2016.17165
JAMA-6	Buntrock, C., Ebert, D. D., Lehr, D., Smit, F., Riper, H., Berking, M., & Cuijpers, P. (2016). Effect of a web-based guided self-help intervention for prevention of major depression in adults with subthreshold depression: A randomized clinical trial. *JAMA*, 315(17), 1854–1863. https://doi.org/10.1001/jama.2016.4326
LANCET-1	**Richards, D. A., Ekers, D., McMillan, D., Taylor, R. S., Byford, S., Warren, F. C., … Finning, K. (2016). Cost and outcome of behavioural activation versus cognitive behavioural therapy for depression (COBRA): A randomised, controlled, non-inferiority trial. *The Lancet*, 388, 871–880. https://doi.org/10.1016/S0140-6736(16)31140-0**

LANCET-2	**Kanes, S., Colquhoun, H., Gunduz-Bruce, H., Raines, S., Arnold, R., Schacterle, A., … Meltzer-Brody, S. (2017). Brexanolone (SAGE-547 injection) in post-partum depression: A randomised controlled trial. *The Lancet*, 390, 480–489. https://doi.org/10.1016/S0140-6736(17)31264-3**
LANCET-3	Patel, V., Weobong, B., Weiss, H. A., Anand, A., Bhat, B., Katti, B., … Fairburn, C. G. (2017). The Healthy Activity Program (HAP), a lay counsellor-delivered brief psychological treatment for severe depression, in primary care in India: A randomised controlled trial. *The Lancet*, 389(10065), 176–185. https://doi.org/10.1016/S0140-6736(16)31589-6
LANCET-4	Blumberger, D. M., Vila-Rodriguez, F., Thorpe, K. E., Feffer, K., Noda, Y., Giacobbe, P., … Downar, J. (2018). Effectiveness of theta burst versus high-frequency repetitive transcranial magnetic stimulation in patients with depression (THREE-D): A randomised non-inferiority trial. *The Lancet*, 391(10131), 1683–1692. https://doi.org/10.1016/S0140-6736(18)30295-2
LANCET-5	Rona, R. J., Burdett, H., Khondoker, M., Chesnokov, M., Green, K., Pernet, D., … Fear, N. T. (2017). Post-deployment screening for mental disorders and tailored advice about help-seeking in the UK military: A cluster randomised controlled trial. *The Lancet*, 389(10077), 1410–1423. https://doi.org/10.1016/S0140-6736(16)32398-4
NEJM-1	**Brunoni, A. R., Moffa, A. H., Sampaio-Junior, B., Borrione, L., Moreno, M. L., Fernandes, R. A., … Benseñor, I. M. (2017). Trial of electrical direct-current therapy versus escitalopram for depression. *New England Journal of Medicine*, 376(26), 2523–2533. https://doi.org/10.1056/NEJMoa1612999**
NEJM-2	**Raskind, M. A., Peskind, E. R., Chow, B., Harris, C., Davis-Karim, A., Holmes, H. A., … Huang, G. D. (2018). Trial of prazosin for post-traumatic stress disorder in military veterans. *New England Journal of Medicine*, 378(6), 507–517. https://doi.org/10.1056/NEJMoa1507598**

****Bold font** indicates that the RCT report was included in the narrowed dataset.*

Appendix 2 Generic structure of Introductions and Methods in clinical psychology RCT reports (preliminary analysis)

RCT Code	genre	Staging
BMJ-1	research warrant	Topic significance ^ Evidence A ^ Evidence B ^ Response
	methodology recount	Study design ^ R1: participant selection ^ R2: interventions ^ R3: randomisation&masking ^ R4: outcome measurement ^ External involvement ^ R5: statistical analysis*
BMJ-2	research warrant	Topic significance ^ Evidence ^ Response
	methodology recount	Study design ^ R1: participant selection ^ R2: interventions ^ R3: randomisation&masking ^ R4: outcome measurement ^ R5: statistical analysis ^ External involvement
JAMA-1	research warrant	Topic significance ^ Evidence ^ Response
	methodology recount	Compliance ^ Study design ^ R1: participant selection ^ R2: randomisation&masking ^ R3: interventions ^ R4: outcome measurement ^ R5: statistical analysis
JAMA-2	research warrant	Topic significance ^ Evidence A ^ Evidence B ^ Response
	methodology recount	Compliance ^ R1: participant selection ^ R2: randomisation&masking ^ R3: outcome measurement ^ R4: interventions ^ R5: statistical analysis
JAMA-3	research warrant	Topic significance ^ Evidence A ^ Evidence B ^ Response
	methodology recount	Study design ^ R1: participant selection ^ R2: randomisation&masking ^ R3: interventions ^ R4: outcome measurement ^ R5: statistical analysis
JAMA-4	research warrant	Topic significance ^ Evidence ^ Response
	methodology recount	Study design ^ R1: participant selection ^ R2: interventions ^ R3: randomisation&masking ^ R4: outcome measurement ^ R5: statistical analysis
JAMA-5	research warrant	Topic significance ^ Evidence A ^ Evidence B ^ Response
	methodology recount	Study design ^ R1: participant selection ^ R2: randomisation&masking ^ R3: interventions ^ R4: outcome measurement ^ R5: statistical analysis
JAMA-6	research warrant	Topic significance ^ Evidence A ^ Evidence B ^ Response
	methodology recount	Study design ^ R1: participant selection ^ R2: randomisation&masking ^ R3: interventions ^ R4: outcome measurement ^ R5: statistical analysis
LANCET-1	research warrant	Topic significance ^ Evidence A ^ Evidence B ^ Response
	methodology recount	R1: participant selection ^ R2: randomisation&masking ^ R3: interventions ^ R4: outcome measurement ^ R5: statistical analysis ^ External involvement
LANCET-2	research warrant	Topic significance ^ Evidence ^ Response
	methodology recount	Study design ^ R1: participant selection ^ R2: randomisation&masking ^ R3: interventions ^ R4: outcome measurement ^ R5: statistical analysis ^ External involvement

LANCET-3	research warrant	Topic significance ^ Evidence A ^ Evidence B ^ Response
	methodology recount	R1: participant selection ^ R2: randomisation&masking ^ R3: interventions ^ R4: outcome measurement ^ R5: statistical analysis ^ External involvement
LANCET-4	research warrant	Topic significance ^ Evidence A ^ Evidence B ^ Response
	methodology recount	Study design ^ R1: participant selection ^ R2: randomisation&masking ^ R3: interventions ^ R4: outcome measurement ^ R5: statistical analysis ^ External involvement
LANCET-5	research warrant	Topic significance ^ Evidence ^ Response
	methodology recount	Study design ^ R1: participant selection ^ R2: randomisation&masking ^ R3: interventions ^ R4: outcome measurement ^ R5: statistical analysis ^ External involvement
NEJM-1	research warrant	Topic significance ^ Evidence A ^ Evidence B ^ Response
	methodology recount	Study design ^ R1: participant selection ^ R2: randomisation&masking ^ R3: interventions ^ R4: outcome measurement ^ R5: statistical analysis
NEJM-2	research warrant	Topic significance ^ Evidence ^ Response
	methodology recount	Study design ^ R1: participant selection ^ R2: randomisation&masking ^ R3: interventions ^ R4: outcome measurement ^ R5: statistical analysis

*R = Record

Appendix 3 Generic structure of Introductions (in-depth analysis of the narrowed dataset)

BMJ-1: *Therapist guided internet based cognitive behavioural therapy for body dysmorphic disorder: Single blind randomised controlled trial*

Introduction
[[research warrant]]

- Topic significance
  - [[[[descriptive report]]]]
    - Classification
    - Description
- Evidence A
  - [[[[challenge]]]]
    - Position
    - Counter-arguments
    - Counter-position
- Evidence B
  - [[[[exposition]]]]
    - Position
    - Argument 1
    - Argument 2
- Response

BMJ-2: *Mirtazapine added to SSRIs or SNRIs for treatment resistant depression in primary care: Phase III randomised placebo controlled trial (MIR)*

Introduction
[[research warrant]]

- Topic significance
  - [[[[descriptive report]]]]
    - Description
- Evidence
  - [[[[discussion]]]]
    - Position
    - Perspective 1
    - Perspective 2
- Response

JAMA-1: *Effect of antidepressant switching vs augmentation on remission among patients with major depressive disorder unresponsive to antidepressant treatment: The VAST-D randomized clinical trial*

JAMA-2: *Effect of prolonged exposure therapy delivered over 2 weeks vs 8 weeks vs present-centered therapy on PTSD symptom severity in military personnel: A randomized clinical trial*

LANCET-1: *Cost and outcome of behavioural activation versus cognitive behavioural therapy for depression (COBRA): A randomised, controlled, non-inferiority trial*

LANCET-2: *Brexanolone (SAGE-547 injection) in post-partum depression: A randomised controlled trial*

NEJM-1: *Trial of electrical direct-current therapy versus escitalopram for depression*

NEJM-2: *Trial of prazosin for post-traumatic stress disorder in military veterans*

Appendix 4 Generic structure of Methods (in-depth analysis of the narrowed dataset)

BMJ-1: *Therapist guided internet based cognitive behavioural therapy for body dysmorphic disorder: Single blind randomised controlled trial*
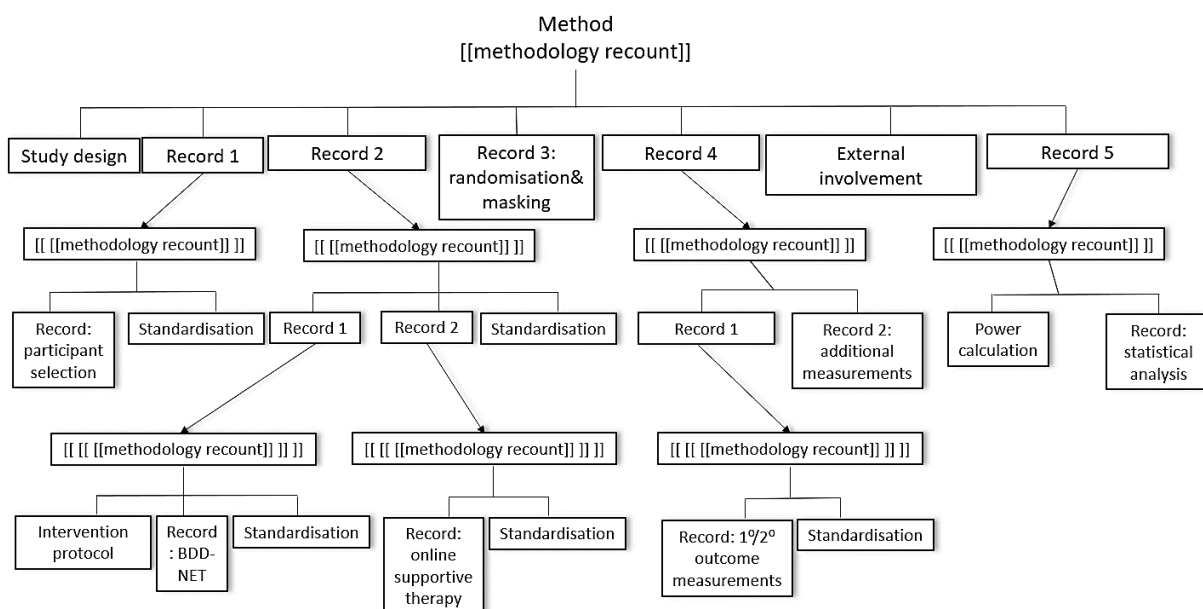
BMJ-2: *Mirtazapine added to SSRIs or SNRIs for treatment resistant depression in primary care: Phase III randomised placebo controlled trial (MIR)*

JAMA-1: *Effect of antidepressant switching vs augmentation on remission among patients with major depressive disorder unresponsive to antidepressant treatment: The VAST-D randomized clinical trial*

JAMA-2: *Effect of prolonged exposure therapy delivered over 2 weeks vs 8 weeks vs present-centered therapy on PTSD symptom severity in military personnel: A randomized clinical trial*

LANCET-1: *Cost and outcome of behavioural activation versus cognitive behavioural therapy for depression (COBRA): A randomised, controlled, non-inferiority trial*

LANCET-2: *Brexanolone (SAGE-547 injection) in post-partum depression: A randomised controlled trial*

NEJM-1: *Trial of electrical direct-current therapy versus escitalopram for depression*

NEJM-2: *Trial of prazosin for post-traumatic stress disorder in military veterans*

Appendix 5 Sample genre analysis (BMJ-1)

KEY (following Szenes, 2017)	signals	example
BOLD CAPITALS	STAGE OF THE SUPERSTRUCTURE	INTRODUCTION
[[bold]]	[[embedded genre realising stage of the superstructure]]	[[research warrant]]
Bold	Stage of [[embedded genre]]	Issue
[[[[bold italics]]]]	*second-order [[[[embedded genre]]]]*	*[[[[challenge]]]]*
Bold italics	*Stage of second-order [[[[embedded genre]]]]*	*Position challenged*
[[[[[[…]]]]]]	third-order [[[[[[embedded genre]]]]]]	[[[[[[methodology recount]]]]]]
Normal font	Stage of third-order [[[[[[embedded genre]]]]]]	Intervention protocol

Introduction

Genre staging	BMJ-1 text 'Therapist guided internet based cognitive behavioural therapy for body dysmorphic disorder: single blind randomised controlled trial'
INTRODUCTION [[research warrant]]	**Introduction**
Topic significance *[[[[descriptive report]]]]*	
Classification	Body dysmorphic disorder (BDD) is a psychiatric disorder characterised by a pervasive preoccupation with perceived defects in physical appearance accompanied by avoidance and time consuming compulsive behaviours, such as mirror gazing and excessive camouflaging to hide perceived defects.[1]
Description	If left untreated, this is a chronic and unremitting disorder that is associated with functional impairment across multiple life domains, relatively high rates of psychiatric admissions to hospital, substance dependence, and suicidality.[2-4] Although the disorder is often underdetected and underdiagnosed within the mental health services,[5,6] epidemiological studies show that it is a common mental health problem, with a prevalence ranging from 0.7% to 2.2% in the general population.[7-10] It is common for those with body dysmorphic disorder to seek non-psychiatric care, such as dermatological treatment or plastic surgery, in an attempt to "fix" the perceived defects; however, such interventions rarely work and can lead to a deterioration of symptoms.[11,12] Evidence based treatments for body dysmorphic disorder include psychopharmacological treatment and cognitive behaviour therapy (CBT).[13-16]
Evidence A *[[[[challenge]]]]*	
Position	Guidance from the National Institute for Health and Clinical Excellence (NICE) recommends that adults should be offered the choice of either a course of a selective serotonin response inhibitor or specialized CBT that deals with the key features of the disorder.[17]
Counter-arguments	There is, however, a gap between supply and demand of CBT because of various factors, such as a lack of trained therapists, direct and indirect costs associated with treatment, and geographical barriers that prevent people with body dysmorphic disorder from receiving specialized CBT.[18-20] In two surveys, only 10-17% of people with body dysmorphic concerns reported that they had received an empirically supported psychotherapy (such as CBT), and 19-34% reported that they had received an SSRI.[19,20]

Counter-position	Thus, one of NICE's key priorities for implementation—namely, that each primary care trust, mental healthcare trust, and children's trust that provides mental health services should have access to a specialist multidisciplinary team offering age appropriate care—is currently far from reality.[17] The growth in demand for mental healthcare exceeds available National Health Service (NHS) resources in the United Kingdom, and this gap is likely to increase up to 2020.[21] Cost pressures require that providers find innovative ways to deliver services.
Evidence B *[[[[exposition]]]]*	
Position	The UK government's mental health strategy "no health without mental health"[22] recommends the increased use of information and communication technology to improve care and access to services.
Argument 1	UK government initiatives such as "Digital First" aim to reduce unnecessary face to face contact between patients and healthcare professionals.[21] Many people with body dysmorphic disorder report that one important reason for not seeking treatment is related to feelings of shame and stigma associated with their concerns about appearance, making telecare options potentially suitable.[19,20]
Argument 2	Internet based CBT is a burgeoning area of mental health aimed at increasing access to specialized behavioural treatments. In some countries (such as Sweden, Australia, and the Netherlands) internet based CBT has been implemented as part of the regular healthcare system and is efficacious and cost effective for a wide range of mental health disorders.[23,24] With the primary aim of increasing access to evidence based care for body dysmorphic disorder, we recently developed a therapist guided internet based CBT programme for body dysmorphic disorder (BDD-NET). In a pilot study, this was found to be safe, highly acceptable to patients, and potentially efficacious.[25] Crucially, the treatment required only a fraction of the therapist time associated with regular CBT.
Response	We evaluated the efficacy of BDD-NET compared with online supportive therapy in the management of adults with body dysmorphic disorder. Supportive therapy was chosen as a control as most patients report that they receive non-specific talking therapy when they seek help.[19] We hypothesised that BDD-NET would be superior to online supportive therapy in reducing symptoms, as well as other psychiatric symptoms, and improve quality of life.

Method

Genre staging	**BMJ-1 text** 'Therapist guided internet based cognitive behavioural therapy for body dysmorphic disorder: single blind randomised controlled trial'
METHOD **[[methodology recount]]**	**Method**
Study design	**Trial design** This was a single blind parallel group superiority trial conducted at Karolinska Institutet from November 2013 to January 2015. Participants were randomly assigned to 12 weeks of BDD-NET (n=47) or online supportive therapy (n=47) in a 1:1 ratio without restriction. Both groups were followed for three months after the end of treatment (six months from baseline). This follow-up point was not included in the trial registration (clinicaltrials.gov) because of an administrative error but was included in the original study protocol. Participants randomised to supportive therapy were offered BDD-NET after the six month follow-up assessments. No changes to methods were made after the trial started. The study is reported in accordance to the Consolidated Standards for Reporting Trials (CONSORT) statement for non-pharmacological treatments.[26]
Record 1: ~~participant selection~~ *[[[[methodology recount]]]]*	

Record: participant selection	**Participants** Eligible participants were individuals with access to the internet, aged 18 or over, and with a principal diagnosis of body dysmorphic disorder according to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5),[1] with a score of at least 20 on the modified Yale-Brown obsessive-compulsive scale (BDD-YBOCS).[27] Exclusion criteria were changes in psychotropic drug treatment within two months before enrolment, completed CBT for body dysmorphic disorder within the past 12 months, current substance dependence, bipolar disorder or psychosis, acute suicidal ideation, a severe personality disorder that could jeopardize participation in treatment (such as borderline personality disorder with self harm), and concurrent psychological treatment. Participants who were taking psychotropic drugs and had been taking a stable dose for at least two months before enrolment were asked to keep their dose stable during the study period. ***Recruitment and determination of eligibility*** Participants were recruited from all over Sweden. Flyers were distributed to psychiatrists and general practitioners throughout Sweden with information about the study. In addition, the study was advertised in national newspapers. Interested applicants had to register on the study's secure website and complete an online screening consisting of the Montgomery-Åsberg depression rating scale self report (MADRS-S),[28] alcohol use disorders identification test,[29] drug user disorders identification test,[30] body dysmorphic disorder questionnaire,[31] and general background information. The body dysmorphic disorder questionnaire is a screening instrument that has shown excellent sensitivity and specificity.[31] Potentially suitable participants underwent a structured diagnostic interview with a clinical psychologist or with a trained student in the final semester of a five year clinical psychology programme. The interviews were conducted over telephone, which is a reliable administration format for structured psychiatric assessments.[32] To establish a diagnosis of body dysmorphic disorder, we used the structured clinical interview for DSM-IV axis I disorders, with an added question about the presence of repetitive behaviours to reflect the updates made to the diagnostic criteria of body dysmorphic disorder in DSM-5. The mini-international neuropsychiatric interview was used to determine the presence of other comorbid psychiatric disorders.[33]
Standardisation	All assessors had received extensive training in structured diagnostic interviews. To ensure reliability of diagnostic procedure and eligibility criteria, a consultant psychiatrist reviewed each case and made the final decision on enrolment.
Record 2: ~~interventions~~ **[[[[methodology recount]]]]**	**Interventions**
Record 1: ~~***BDD-NET intervention***~~ **[[[[[[methodology recount]]]]]]**	***BDD-NET***
Intervention protocol	BDD-NET is delivered through a tailored online platform with a dedicated hospital server with encrypted traffic and an authentication login function to guarantee participants' confidentiality. Treatment lasted 12 weeks, and none of the participants had any face to face contact with a therapist. The treatment protocol is based on a CBT model for body dysmorphic disorder, emphasizing the role of negatively reinforced avoidance and safety seeking behaviours (such as mirror checking and camouflaging perceived physical defects) as maintaining factors of body dysmorphic disorder. The treatment protocol has been validated in a previous trial, and the treatment effects are comparable with those gained in traditional face to face CBT.[25] The main intervention in BDD-NET is systematic exposure to fear eliciting situations or events combined with response prevention until anxiety and urges to ritualise subside (such as leaving home and refraining from compulsive mirror checking). In total, BDD-NET consists of eight interactive modules delivered over 12 weeks, with the first five modules containing the core treatment components.[23] Each module is devoted to a special theme and covers psychoeducation, a cognitive behaviour conceptualization of body dysmorphic disorder, cognitive restructuring, exposure and response prevention, more on exposure and response prevention, values based behaviour change, difficulties encountered during treatment, and prevention of relapse. To progress to the next module participants have to complete

	homework assignments (such as reading text material, answering a quiz at the end of each module, filling out worksheets, or doing exposure and response prevention) and report to their therapist.
Record: BDD-NET intervention	The participants had contact with an identified therapist throughout the entire treatment using a built-in email system on the BDD-NET webpage. Participants could log in and send emails at any time. All homework assignments and questions from the participants were reviewed and answered within 36 hours, except on weekends. The role of the therapist was mainly to guide and coach the participant throughout the treatment, provide feedback on homework assignments, answer questions from the participants, and consecutively grant access to the next treatment module. The participants were notified by an automated text message (SMS) when they had a new email in the treatment platform from their therapist.
Standardisation	The therapists guiding the participants through the treatment were four clinical psychology students who had completed their basic clinical training (320 hours) and had provided therapy in milder cases under the supervision of a senior psychologist. The clinical psychology students had no prior experience of treating body dysmorphic disorder but were closely supervised by the lead author (JE) with weekly meetings throughout the trial. The duration of therapist contact and sent emails was automatically recorded by the BDD-NET platform. Median therapist time spent weekly per participant reading and answering emails was 13.2 minutes. To ensure treatment integrity and adherence to protocol, the lead author monitored the messages sent by the therapists throughout the entire treatment, and provided supervision. Appendix 1 shows a screenshot of BDD-NET.
Record 2: ~~online supportive therapy~~ [[[[[[methodology recount]]]]]]	*Online supportive therapy*
Record: online supportive therapy	Participants had access to the integrated email system on the BDD-NET webpage and unlimited access to an identified therapist. They were given the opportunity to talk freely about their experiences, thoughts, and feelings about body dysmorphic disorder and how it affected their life. The therapist sent an email at least once a week, encouraging the participant to discuss distressing life events and to promote problem solving. The therapists used skills drawn from counselling techniques and included minimal encouragers, reflecting, empathising, and summarising. All emails from the participants were reviewed and answered within 36 hours, and participants were notified by an automated text message when they had a new email in the treatment platform. Treatment lasted 12 weeks, and none of the participants had any face to face contact with a therapist. Non-directive supportive therapy delivered via the internet has been shown to reduce symptoms associated with obsessive compulsive disorder,[34] though there are no reports of its efficacy for body dysmorphic disorder. The supportive therapy served as a control for caregiver attention and the possible anxiety alleviating effect of sharing one's distress with a therapist.
Standardisation	The same therapists that guided participants through BDD-NET delivered the supportive therapy. Therapists spent a median of 6.3 minutes per participant per week reading and answering emails. To ensure treatment integrity, the lead author monitored the messages sent by the therapists throughout the entire treatment and provided supervision.
Standardisation	No therapist drift (deviation from treatment protocol) was detected in either of the groups.
Record 3: randomisation& masking	**Randomisation and masking** Participants were randomised on a 1:1 ratio with simple randomisation with no constraints. To prevent potential selection bias related to the randomisation procedure, an external party not involved in the inclusion process used a true number service (www.random.org). Allocation concealment was ensured through randomisation after the decision to include each participant had been made. Immediately after randomisation, participants received information about which treatment they had been allocated to and how they could log on to the secure website. Assessors in the trial remained masked to treatment allocation at baseline and three and six month follow-up. Because of the nature of the intervention, participants and therapists were not blinded to treatment.
Record 4: ~~outcome measurement~~	**Assessment points and outcomes**

[[[[methodology recount]]]]	
Record 1: ~~***1º/2º outcome measurement***~~ [[[[[[methodology recount]]]]]]	
Record 1: 1º/2º outcome measurement	All participants were assessed at baseline and then received 12 weeks of treatment. Follow-up times were three and six months from baseline (after treatment and three months after treatment, respectively). After the six month follow-up, participants in the supportive therapy group were offered BDD-NET and reassessed after receiving 12 weeks of additional treatment with BDD-NET. Participants also completed online self report measures at these time points, a method that has been shown to be as reliable and as valid as written administration.[35,36] The primary outcome was change in severity of symptoms of body dysmorphic disorder assessed with the BDDYBOCS administered by a clinician.[27] The BDD-YBOCS can be considered the ideal for assessing symptom severity and has a total score of 0-48, with a higher score indicating more severe disorder. Secondary outcomes included responder status defined as an empirically derived cut off point of $\geqslant$30% reduction from baseline on the BDD-YBOCS.[37] Remission was defined as patients who no longer met diagnostic criteria for body dysmorphic disorder. Depressive symptoms were assessed with the MADRS-S.[28] Clinician rated global functioning and improvement was assessed with the global assessment of functioning scale (GAF)[38] and the clinical global improvement scale (CGI-I).[39] Quality of life was assessed with the EQ5D EuroQol (EQ5D).[40] All outcomes other than BDD-YBOCS and MADRS-S at three months were not pre-specified in the registration at clinicaltrials.gov because of an administrative error but were included in the original trial protocol approved by the regional ethics committee before the start of the trial.
Standardisation	To ensure quality of assessments, clinicians in this trial practiced together on case examples with excellent reliability between raters (intraclass correlation 0.95, 95% confidence interval 0.89 to 0.98).
Record 2: additional measurements	The occurrences of adverse events were recorded mid-treatment and after treatment with a self report form.[41] Treatment credibility and expectancy of improvement were recorded at week two with the C scale (included post hoc after trial registration).[42]
External involvement	**Patient involvement** We received input from patients from the BDD-NET pilot trial on the treatment material. No patients were involved in setting the research question or the outcome measures, nor were they involved in developing plans for recruitment, design, or implementation of the study. No patients were asked to advise on interpretation or writing up of results. We carefully assessed the burden of the trial interventions on the patients by collecting information about adverse events, quality of life, and time spent on the treatment. We plan to disseminate the results of the research to study participants and to the Swedish OCD Foundation.
Record 5: ~~**statistical analysis**~~ ***[[[[methodology recount]]]]***	**Power calculation and statistical analysis**
Power calculation	We powered the study to be able to detect at least a medium standardised effect size (Cohen's d). We based power calculations on a previous pilot trial of BDD-NET and the efficacy of online supportive therapy for obsessive compulsive disorder.[25 34] A sample size of 39 per group was required to give 80% power and a two sided 5% significance for detecting a mean difference between groups of at least 4 and a standard deviation of 6.24 on the BDD-YBOCS between BDD-NET and supportive therapy. We anticipated a potential 10% dropout rate, giving a planned sample size of at least 44 per group, or 88 in total. There were no planned interim analyses or rules for stopping.
Record: statistical analysis	Analyses were by intention to treat, with participants analysed in the group to which they had been randomised. Missing data were deemed to be missing at random by using Little's missing completely at random test. Linear mixed models with maximum likelihood estimations were used to evaluate the effect of treatment group on the different outcomes. Such models take into account the differences in

rate of change and differences in trajectories of change between individuals with repeated responses and use all the available data for each participant.[43] The fixed part of the model included a treatment indicator variable (supportive therapy/BDD-NET), a time indicator variable (three or six months), and an interaction effect of treatment × time to allow for differential change between the two groups from the three to the six month follow-up. Baseline (before treatment) scores on each outcome measure were included as covariates. Participant varying intercepts were included as a random effect in the model. As therapist support time varied between the two treatment arms, it was included as an additional covariate in the model. Because it did not predict outcome, however, ($P=0.11-0.98$) it was dropped from the final model. We used $\chi2$ tests for categorical data and independent t tests for assessing differences between groups when time was not a factor on the outcome variable. We carried out post hoc analysis of participants in the supportive therapy arm who later crossed over to BDD-NET after the six month follow-up using paired t tests. Effect sizes within and between groups were calculated as Cohen's d. All statistical analyses were done in STATA 13.1.

Appendix 6 Sample IDEATION analysis (BMJ-1)

(following Hao, 2015, 2020)		outer orbit				
		inner orbit				
		nucleus				
		centre				
Figure #	dimension / position of the figure	occurrence / entity (= entity)	=+entity; +quality / entity	+x entity	x entity	xx entity
Introduction						
1.1		Body dysmorphic disorder (BDD) is a psychiatric disorder…				
2.1		(BDD)	left untreated			(by health professionals)
2.2		This is a chronic and unremitting disorder…				
3.1		is often underdetected	the disorder;			
3.2		the disorder is underdiagnosed	the disorder		within the mental health services	
3.3	epidemiological studies show	it is a common mental health problem, with a prevalence ranging from 0.7% to 2.2% in the general population				
4.1	It is common for those with body dysmorphic disorder	to seek	non-psychiatric care, such as dermatological treatment or plastic surgery			
4.1 (gm)		(unpacked) to"fix"	perceived defects			
4.2		rarely work	such interventions			
4.3 (gm)		(unpacked) cause… to deteriorate	symptoms			such interventions
5.1		Evidence based treatments… include psychopharmacological treatment and cognitive behaviour therapy (CBT).[13-16]				

		centre	nucleus	inner orbit	outer orbit	
Figure #	**dimension / position of the figure**	**occurrence / entity (=entity)**	**=+entity; +quality / entity**	**+x entity**	**x entity**	**xx entity**
6.1 (gm)	Guidance from the National Institute for Health and Clinical Excellence (NICE) recommends	(unpacked) should be offered choose	a course of a selective serotonin response inhibitor or specialised CBT [[that deals with the key features of the disorder	adults; (by doctors)		
7.1		There is a gap between supply and demand of CBT			because of various factors…	
8.1	in two surveys, only 10-17% of people with body dysmorphic concerns reported	had received	an empirically supported psychotherapy (such as CBT)	they		
8.2	19-34% reported	had received	SSRI	they		
9.1		one of NICE's key priorities for implementation… is currently far from reality.				
10.1		has grown more	demand for mental healthcare			
10.2	(it) is likely	to increase	this gap		up to 2020.	
11.1	Cost pressures require	find	innovative ways to deliver services	providers		
12.1 (gm)	The UK government's mental health strategy "no health without mental health" recommends	(unpacked) should be used more	information and communication technology	(by providers)		
12.2		improve	care			

		outer orbit				
		inner orbit				
		nucleus				
		centre				
Figure #	dimension / position of the figure	occurrence / entity (=entity)	=+entity; +quality / entity	+x entity	x entity	xx entity
12.2		improve	carere and access to services	information and communication technology		
13.1		aim to reduce	unnecessary face to face contact between patients and healthcare professionals	UK government initiatives such as "Digital First"		
14.1	Many people with body dysmorphic disorder report	one important reason for not seeking treatment is related to feelings of shame and stigma…				
14.2		telecare options	makes…potentially suitable			(figure 14.1)
15.1		Internet based CBT is a burgeoning area of mental health				
16.1		internet based CBT has been implemented as part of the regular healthcare system			In some countries (such as Sweden, Australia, and the Netherlands)	(by health services)
16.2		Internet based CBT	is efficacious and cost effective for a wide range of mental health disorders			
17.1 (gm)		to increase	access to evidence based care for body dysmorphic disorder			
17.2		recently developed	a therapist guided internet based CBT programme for body dysmorphic disorder (BDD-NET)	we		

		outer orbit				
		inner orbit				
		nucleus				
		centre				
Figure #	dimension / position of the figure	occurrence / entity (=entity)	=+entity; +quality / entity	+x entity	x entity	xx entity
18.1	In a pilot study… was found	This (BDD-NET)	to be safe, highly acceptable to patients, and potentially efficacious			
19.1	Crucially,	the treatment required			only a fraction of the therapist time associated with regular CBT	
20.1		evaluated	the efficacy of BDD-NET; we			
21.1		Supportive therapy was chosen as a control (therapy)				(by us)
21.2	most patients report	receive	non-specific talking therapy	they		
22.1a	We hypothesised	BDD-NET would be superior to online supportive therapy				
22.1b	We hypothesised	would improve	quality of life	BDD-NET		
Method						
Trial design						
23.1		This was a single blind parallel group superiority trial conducted at Karolinska Institutet from November 2013 to January 2015				
24.1		Participants were randomly assigned to 12 weeks of BDD-NET (n=47) or online supportive therapy (n=47);			in a 1:1 ratio without restriction	(by us)

		centre	nucleus	inner orbit	outer orbit	
Figure #	**dimension / position of the figure**	**occurrence / entity (=entity)**	**=+entity; +quality / entity**	**+x entity**	**x entity**	**xx entity**
25.1		were followed	Both groups; (by us)		for three months after the end of treatment (six months from baseline)	
26.1		This follow-up point was not included in the trial registration (clinicaltrials.gov)			because of an administrative error	(by us)
26.2		(this follow-up point) was included in the original study protocol				(by us)
27.1		were offered	BDD-NET	Participants randomised to supportive therapy; (by us)	after the six month follow-up assessments.	
28.1		were made	No changes to methods	(by us)		
28.2		started	the trial			
29.1		is reported	The study		in accordance to the Consolidated Standards for Reporting Trials (CONSORT) statement for non-pharmacological treatments.	

Figure #	dimension / position of the figure	occurrence / entity (=entity)	=+entity; +quality / entity	+x entity	x entity	xx entity

outer orbit — inner orbit — nucleus — centre

| Participants | | | | | | |

| 30.1 | | Eligible participants were individuals with access to the internet, aged 18 or over, and with a principal diagnosis of body dysmorphic disorder according to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5), with a score of at least 20 on the modified Yale-Brown obsessive-compulsive scale (BDD-YBOCS). | | | | |
| 31.1 | | Exclusion criteria were changes in psychotropic drug treatment within two months before enrolment, completed CBT for body dysmorphic disorder within the past 12 months, current substance dependence, bipolar disorder or psychosis, acute suicidal ideation, a severe personality disorder [[that could jeopardize participation in treatment (such as borderline personality disorder with self harm)]], and concurrent psychological treatment. | | | | |

		outer orbit				
		inner orbit				
		nucleus				
		centre				
Figure #	**dimension / position of the figure**	**occurrence / <u>entity</u> (=<u>entity</u>)**	**=+entity; +quality / entity**	**+x entity**	**x entity**	**xx entity**
32.1	were asked (by us)	<u>their dose</u>	to keep… stable		during the study period	Participants who were taking psychotropic drugs and had been taking a stable dose for at least two months before enrolment
Recruitment and determination of eligibility						
33.1		were recruited	Participants	(by us)	from all over Sweden	
34.1		were distributed	Flyers with information about the study	to psychiatrists and general practitioners; (by us)	throughout Sweden	
35.1		was advertised	the study	(by us)	in national newspapers.	
36.1		had to register	Interested applicants		on the study's secure website	
36.2		complete	an online screening consisting of the Montgomery-Åsberg depression rating scale self report (MADRS-S), alcohol use disorders identification test, drug user disorders identification test, body dysmorphic disorder questionnaire, and general background information	Interested applicants		

Figure #	dimension / position of the figure	outer orbit				
		inner orbit				
		nucleus				
		centre				
		occurrence / <u>entity</u> (=<u>entity</u>)	=+entity; +quality / entity	+x entity	x entity	xx entity
37.1		<u>The body dysmorphic disorder questionnaire</u> is <u>a screening instrument that has shown excellent sensitivity and specificity</u>				
38.1		underwent	Potentially suitable participants; with a clinical psychologist or with a trained student in the final semester of a five year clinical psychology programme; a structured diagnostic interview			
39.1		were conducted	The interviews	(by us)	over telephone	
39.2		<u>Telephone</u> is <u>a reliable administration format for structured psychiatric assessments</u>				
40.1	to establish	(there is) <u>a diagnosis of body dysmorphic disorder</u>				
40.2		used	the structured clinical interview for DSM-IV axis I disorders, with an added question about the presence of repetitive behaviours	we		
40.3		to reflect	the updates made to the diagnostic criteria of body dysmorphic disorder in DSM-5.			

Figure #	dimension / position of the figure	occurrence / entity (=entity)	=+entity; +quality / entity	+x entity	x entity	xx entity
						outer orbit / **inner orbit** / **nucleus** / **centre**
41.1		was used	The mini-international neuropsychiatric interview	(by us)		
41.2	to determine	the presence of other comorbid psychiatric disorders are present				
42.1		had received	extensive training in structured diagnostic interviews	All assessors;		
43.1 (gm)		diagnostic procedure and eligibility criteria	To ensure… are reliable			
43.2		reviewed	each case; a consultant psychiatrist			
43.3		made the final decision on enrolment	a consultant psychiatrist			
Interventions						
BDD-NET						
44.1		is delivered	BDD-NET	(by therapists)	Through a tailored online platform with a dedicated hospital server with encrypted traffic and an authentication login function	
44.2 (gm)		participants' (identity)	to guarantee… is confidential			
45.1		Treatment			lasted 12 weeks	
45.2		had any face to face contact	none of the participants; with a therapist			

Figure #	dimension / position of the figure	occurrence / entity (=entity)	=+entity; +quality / entity	+x entity	x entity	xx entity
					outer orbit	
				inner orbit		
			nucleus			
		centre				
46.1		The treatment protocol is based on a CBT model for body dysmorphic disorder, emphasising the role of negatively reinforced avoidance and safety seeking behaviours (such as mirror checking and camouflaging perceived physical defects) as maintaining factors of body dysmorphic disorder				
47.1		has been validated	The treatment protocol (by clinicians)		in a previous trial,	
47.2		the treatment effects are comparable to those gained in traditional face to face CBT				
48.1		The main intervention in BDD-NET is systematic exposure to fear eliciting situations or events combined with response prevention until anxiety and urges to ritualise subside (such as leaving home and refraining from compulsive mirror checking)				
49.1		BDD-NET consists of eight interactive modules delivered over 12 weeks, with the first five modules containing the core treatment components				

Figure #	dimension / position of the figure	occurrence / entity (=entity)	=+entity; +quality / entity	+x entity	x entity	xx entity
				outer orbit		
			inner orbit			
			nucleus			
		centre				
50.1		Each module is devoted to a special theme				
50.2		(Each module) covers psychoeducation, a cognitive behaviour conceptualization of body dysmorphic disorder, cognitive restructuring, exposure and response prevention, more on exposure and response prevention, values based behaviour change, difficulties encountered during treatment, and prevention of relapse.				
51.1		To progress	to the next module			
51.2		have to complete	homework assignments (such as reading text material, answering a quiz at the end of each module, filling out worksheets, or doing exposure and response prevention)	participants		
51.3		have to report	participants;		to their therapist	

Figure #	dimension / position of the figure	occurrence / entity (=entity)	=+entity; +quality / entity	+x entity	x entity	xx entity
			outer orbit			
			inner orbit			
		nucleus				
		centre				
52.1		had contact	The participants; with an identified therapist		throughout the entire treatment	
52.2		using	a built-in email system		on the BDD-NET webpage	
53.1		could log in	Participants			
53.2		send	emails		at any time	
54.1		were reviewed	All homework assignments and questions from the participants			
54.2		answered	All homework assignments and questions from the participants		within 36 hours, except on weekends	
55.1 (gm)		(unpacked) mainly guided and	the participant; the therapist		throughout the treatment	
55.2 (gm)		(unpacked) coached	the therapist		throughout the treatment	
55.3 (gm)		(unpacked) provided feedback on homework assignments	the therapist			
55.4 (gm)		(unpacked) answered questions from the participants	the therapist			
55.5 (gm)		(unpacked) and consecutively granted access	to the next treatment module; the therapist			
56.1		were notified	The participants	by an automated text message (SMS)		
56.2		They	had a new email from their therapist		in the treatment platform;	

		outer orbit				
		inner orbit				
		nucleus				
		centre				
Figure #	**dimension / position of the figure**	**occurrence / <u>entity</u> (=<u>entity</u>)**	**=+entity; +quality / entity**	**+x entity**	**x entity**	**xx entity**
57.1		<u>The therapists guiding the participants through the treatment</u> were <u>four clinical psychology students who had completed their basic clinical training (320 hours) and had provided therapy in milder cases under the supervision of a senior psychologist</u>				
58.1		<u>The clinical psychology students</u> had <u>no prior experience of treating body dysmorphic disorder</u>				
58.2		were closely supervised	The clinical psychology students; by the lead author (JE)		with weekly meetings; throughout the trial	
59.1		was automatically recorded	The duration of therapist contact and sent emails	by the BDD-NET platform		
60.1		<u>Median therapist time spent weekly per participant reading and answering emails</u> was <u>13.2 minutes</u>				
61.1a		To ensure	treatment integrity			
61.1b (gm)		therapists/ participants	To ensure.. are adherent to protocol			
61.2		monitored	the messages sent by the therapists; the lead author		throughout the entire treatment	

Figure #	dimension / position of the figure	occurrence / entity (=entity)	=+entity; +quality / entity	+x entity	x entity	xx entity
			outer orbit			
			inner orbit			
		nucleus				
		centre				
61.3 (gm)		(unpacked) supervised	the therapists; the lead author			
62.1		Appendix 1 shows a screenshot of BDD-NET				
Online supportive therapy						
63.1a		had access	Participants; to the integrated email system		on the BDD-NET webpage	
63.1b		had unlimited access	Participants; to an identified therapist			
64.1		were given the opportunity to talk freely	They;		about their experiences…	
65.1		sent	an email	The therapist	at least once a week	
65.2		encouraging… to discuss	the participant ;distressing life events			The therapist
65.3		to promote	problem solving	The therapist		
66.1		used	skills drawn from counselling techniques	The therapists		
66.2		included minimal encouragers, reflecting, empathising, and summarising in their counselling				The therapists
67.1		were reviewed	All emails from the participants		within 36 hours	
67.2		answered	All emails from the participants		within 36 hours	
67.3		were notified	participants	by an automated text message		
67.4		they	had a new email		in the treatment platform	

		outer orbit				
		inner orbit				
		nucleus				
		centre				
Figure #	**dimension / position of the figure**	**occurrence / entity (=entity)**	**=+entity; +quality / entity**	**+x entity**	**x entity**	**xx entity**
68.1		<u>Treatment</u>			lasted <u>12 weeks</u>	
68.2		had any face to face contact	none of the participants; with a therapist			
69.1	(It) has been shown	to reduce	symptoms associated with obsessive compulsive disorder	Non-directive supportive therapy delivered via the internet		
69.2		there are <u>no reports of its efficacy for body dysmorphic disorder</u>				
70.1		<u>The supportive therapy</u> served as <u>a control for caregiver attention</u> and <u>the possible anxiety alleviating effect…</u>				
71.1		delivered	the supportive therapy	The same therapists that guided participants through BDD-NET		
72.1		spent	a median of 6.3 minutes	Therapists	per participant per week	
72.2		reading	emails			
72.3		answering	emails			
73.1		To ensure	treatment integrity			
73.2		monitored	the lead author; the messages sent by the therapists			
73.3		provided	supervision	the lead author		
74.4		was detected	No therapist drift (deviation from treatment protocol)		in either of the groups	

	outer orbit				
	inner orbit				
	nucleus				
	centre				
Figure #	**dimension / position of the figure**	**occurrence / entity (=entity)**	**=+entity; +quality / entity**	**+x entity**	**x entity**	**xx entity**

Figure #	**dimension / position of the figure**	**occurrence / entity (=entity)**	**=+entity; +quality / entity**	**+x entity**	**x entity**	**xx entity**
Randomisation and masking						
75.1		Participants were randomised (into treatment groups)			on a 1:1 ratio; with simple randomisation with no constraints	(by X)
76.1		To prevent	potential selection bias related to the randomisation procedure			
76.2		used	a true number service	an external party not involved in the inclusion process		
77.1 (gm)		ensured…is concealed	allocation		through randomisation	(we)
77.2		had been made the decision to include each participant	(by a consultant psychiatrist)			
78.1 (gm)		The participants had been randomised (into treatment groups)				(by an external party)
78.2		received	information about which treatment they had been allocated to…	participants		
79.1		Assessors in the trial remained masked to treatment allocation			at baseline and three and six month follow-up.	
80.1		participants and therapists were not blinded to treatment			Because of the nature of the intervention	
Assessment points and outcomes						
81.1		were assessed	All participants	(by us)	at baseline	

figure #	dimension / position of the figure	occurrence / entity (=entity)	=+entity; +quality / entity	+x entity	x entity	xx entity
						outer orbit
					inner orbit	
			nucleus			
		centre				
81.2		received	12 weeks of treatment	All participants		
82.1		Follow-up times were three and six months from baseline (after treatment and three months after treatment, respectively)				
83.1		were offered	BDD-NET	participants in the supportive therapy group; (by us)	After the six month follow-up	
83.2		were reassessed	participants in the supportive therapy group			
83.3		receiving	12 weeks of additional treatment with BDD-NET	participants in the supportive therapy group		
84.1		completed	online self report measures	Participants	at these time points	
84.2	(It) has been shown	a method to be as reliable and as valid as written administration				
85.1		The primary outcome was change in severity of symptoms of body dysmorphic disorder assessed with the BDD-YBOCS administered by a clinician				
86.1	can be considered	The BDD-YBOCS… the ideal for assessing symptom severity				
86.2		The BDD-YBOCS has a total score of 0-48, with a higher score indicating more severe disorder				

figure #	dimension / position of the figure	occurrence / entity (=entity)	=+entity; +quality / entity	+x entity	x entity	xx entity
					outer orbit	
				inner orbit		
		nucleus				
		centre				
87.1		Secondary outcomes included responder status defined as an empirically derived cut off point of ≥30% reduction from baseline on the BDD-YBOCS				
88.1		Remission was defined as patients who no longer met diagnostic criteria for body dysmorphic disorder				
89.1		were assessed	Depressive symptoms		with the MADRS-S	
90.1		was assessed	Clinician rated global functioning and improvement		with the global assessment of functioning scale (GAF)38 and the clinical global improvement scale (CGI-I)	
91.1		was assessed	Quality of life		with the EQ5D EuroQol (EQ5D)	
92.1		All outcomes other than BDD-YBOCS and MADRS-S at three months were not pre-specified in the registration			at clinicaltrials.gov; because of an administrative error	(by us)
92.2		All outcomes other than BDD-YBOCS and MADRS-S at three months were included in the original trial protocol approved by the regional ethics committee before the start of the trial				(by us)

		outer orbit				
		inner orbit				
		nucleus				
		centre				
figure #	dimension / position of the figure	occurrence / <u>entity</u> (=<u>entity</u>)	=+entity; +quality / entity	+x entity	x entity	xx entity
93.1 (gm)		<u>the assessments</u>	(unpacked) To ensure… are high-quality			
93.2		practised together	clinicians in this trial		on case examples; with excellent reliability between raters	
94.1		were recorded	The occurrences of adverse events		mid-treatment and after treatment; with a self report form	
95.1		were recorded	Treatment credibility and expectancy of improvement		at week two; with the C scale (included post hoc after trial registration)	
Patient involvement						
96.1		received	input on the treatment material	we; from patients from the BDD-NET pilot trial		
97.1		<u>No patients</u> were involved [as 'observers'] in setting the research question or the outcome measures,				(by us)
97.2		nor were <u>they</u> involved [as 'observers'] in developing plans for recruitment, design, or implementation of the study				(by us)
98.1	were asked (by us)	to advise	on interpretation or writing up of results	No patients		

figure #	dimension / position of the figure	occurrence / entity (=entity)	=+entity; +quality / entity	+x entity	x entity	xx entity
			outer orbit			
			inner orbit			
		nucleus				
		centre				
99.1		carefully assessed	We; the burden of the trial interventions on the patients			
99.2		collecting	information about adverse events, quality of life, and time spent on the treatment			
100.1	We plan to	disseminate	the results of the research	to study participants and to the Swedish OCD Foundation		
Power calculation and statistical analysis						
101.1		powered…	the study	We		
102.2		to be able to detect	at least a medium standardised effect size (Cohen's d)			
102.1		based power calculations on a previous pilot trial of BDD-NET and the efficacy of online supportive therapy for obsessive compulsive disorder				We
103.1	(It) was required	(there is) A sample size of 39 per group				
103.2		to give 80% power and a two sided 5% significance for detecting a mean difference between groups of at least 4 and a standard deviation of 6.24 on the BDD-YBOCS between BDD-NET and supportive therapy				

figure #	dimension / position of the figure	occurrence / entity (=entity)	=+entity; +quality / entity	+x entity	x entity	xx entity
			outer orbit / inner orbit / nucleus / centre			
104.1	We anticipated	(there will be) a potential 10% dropout rate				
104.2		giving a planned sample size of at least 44 per group, or 88 in total.				
105.1		There were no planned interim analyses or rules for stopping.				
106.1 (gm		Were performed intention-to-treat (analyses)	Analyses	(by us)		
106.2		using	an intention-to treat method in which participants were analysed in the group to which they had been randomised			
107.1	were deemed (by us)	Missing data …to be missing [data] at random				
107.2		using	Little's missing completely at random test				
108.1		were used	Linear mixed models with maximum likelihood estimations			
108.2		to evaluate	the effect of treatment group on the different outcomes			
109.1		Such models take into account the differences in rate of change and differences in trajectories…				
109.2		use	all the available data for each participant	Such models		

figure #	dimension / position of the figure	outer orbit				
		inner orbit				
		nucleus				
		centre				
		occurrence / entity (=entity)	=+entity; +quality / entity	+x entity	x entity	xx entity
110.1		The fixed part of the model included a treatment indicator variable (supportive therapy/BDD-NET), a time indicator variable (three or six months), and an interaction effect of treatment × time				
110.2 (gm)		(unpacked) can be investigated	differential change between the two groups from the three to the six month follow-up	(by us)		
111.1		Baseline (before treatment) scores on each outcome measure were included as covariates				(by us)
112.1		Participant varying intercepts were included as a random effect in the model				(by us)
113.1		varied	therapist support time		between the two treatment arms	
113.2		it was included as an additional covariate in the model				(by us)
114.1		it did not predict outcome				
114.2		it was dropped from the final model				(by us)
115.1		used	χ2 tests	We	for categorical data	
115.2		used	independent t tests	We		
115.3		time was not a factor on the outcome variable				

figure #	dimension / position of the figure	occurrence / <u>entity</u> (=<u>entity</u>)	=+entity; +quality / entity	+x entity	x entity	xx entity
				outer orbit		
			inner orbit			
		nucleus				
		centre				
116.1		carried out	post hoc analysis of participants in the supportive therapy arm [[who later crossed over to BDD-NET after the six month follow-up	We		
116.2		using	paired t tests.			
117.1		were calculated	Effect sizes within and between groups…as Cohen's d.	(by us)		
118.1		were done	All statistical analyses	(by us)	in STATA 13.1	

Appendix 7 Sample CONNEXION analysis (BMJ-1)

KEY (following Martin & Rose, 2007)	
Internal CONNEXION (arrows on the left)	**External CONNEXION (arrows on the right)**
- **addition**	- **addition**
additive = add;	additive = add;
alternative = alt;	alternative = alt;
- **comparison**	- **comparison**
similar: compare/rework/adjust = simil: compare/rework/adjust;	similar = simil;
different: contrast/retract = diff: contrast/retract;	different = diff;
- **time**	- **time**
time: successive/simultaneous = time: succ/simul;	time: successive/simultaneous = time: succ/simul;
- **consequence**	- **consequence**
consequence: conclude/justify/concession = consq: conclude/justify/concession	consequence: cause/means/condition/purpose/concession = consq: cause/means/condition/purpose/concession

	Section	Stage	Figure no.		Type	Internal	Text	External	Type	Notes
1										
2	Introduction						*Introduction*			
3										
4	Introduction	Topic sig.	1.1				Body dysmorphic disorder (BDD) is a psychiatric disorder [[characterised by a pervasive preoccupation with perceived defects in physical appearance [[accompanied by avoidance and time consuming compulsive behaviours, such as mirror gazing and excessive camouflaging to hide perceived defects]]]].[1]			
5										
6	Introduction	Topic sig.	2.1				If left untreated,			
7									consq: condition	
8	Introduction	Topic sig.	2.2				this is a chronic and unremitting disorder [[that is associated with functional impairment across multiple life domains, relatively high rates of psychiatric admissions to hospital, substance dependence, and suicidality]].[2-4]			

#	Section	Function	Clause	Relation	Text		Metaphor
9							
10	Introduction	Topic sig.	3.1		**Although** the disorder is often underdetected		
11						add	
12	Introduction	Topic sig.	3.2		‖ **and** underdiagnosed within the mental health services,[5,6]		
13				consq: concession			
14	Introduction	Topic sig.	3.3		epidemiological studies show that it is a common mental health problem, with a prevalence ranging from 0.7% to 2.2% in the general population.[7-10]		
15							
16	Introduction	Topic sig.	4.1		It is common for those with body dysmorphic disorder [[to seek non-psychiatric care, such as dermatological treatment or plastic surgery, **in an attempt to** "fix" the perceived defects;]]		logical metaphor: prep.phrase as external consq: purpose
17				consq: concession			
18	Introduction	Topic sig.	4.2		**however**, such interventions rarely work		
19						add	
20	Introduction	Topic sig.	4.3		‖ **and** can **lead to** a deterioration of symptoms.[11,12]		logical metaphor: relational verb as external cause
21						diff	
22	Introduction	Topic sig.	5.1		**(on the other hand)** Evidence based treatments for body dysmorphic disorder include psychopharmacological treatment and cognitive behaviour therapy (CBT).[13-16]		
23				simil: rework			
24	Introduction	Evidence A	6.1		**(e.g.)** Guidance from the National Institute for Health and Clinical Excellence (NICE) recommends that adults should be offered the choice of either a course of a selective serotonin response inhibitor or specialised CBT [[that deals with the key features of the disorder]].[17]		
25				consq: concession			
26	Introduction	Evidence A	7.1		There is, **however**, a gap between supply and demand of CBT because of various factors, such as a lack of trained therapists, direct and indirect costs associated with treatment, and geographical barriers [[that prevent people with body dysmorphic disorder from receiving specialized CBT]].[18-20]		

#							
27				simil: rework			
28	Introduction	Evidence A	8.1		(e.g.) In two surveys, only 10-17% of people with body dysmorphic concerns reported that they had received an empirically supported psychotherapy (such as CBT),		
29						add	
30	Introduction	Evidence A	8.2		‖ and 19-34% reported that they had received an SSRI.[19,20]		
31				consq: conclude			
32	Introduction	Evidence A	9.1		Thus, one of NICE's key priorities for implementation—[[namely, that each primary care trust, mental healthcare trust, and children's trust [[that provides mental health services]] should have access to a specialist multidisciplinary team [[offering age appropriate care]]]]—is currently far from reality.[17]		
33				simil: rework			
34	Introduction	Evidence A	10.1		(i.e.) The growth in demand for mental healthcare exceeds available National Health Service (NHS) resources in the United Kingdom,		
35							
36	Introduction	Evidence A	10.2		‖ and this gap is likely to increase up to 2020.[21]	add	
37				consq: conclude			
38	Introduction	Evidence A	11.1		(thus) Cost pressures require that providers find innovative ways [[to deliver services]].		
39				simil: rework			
40	Introduction	Evidence B	12.1		(e.g.) The UK government's mental health strategy "no health without mental health"[22] recommends the increased use of information and communication technology		
41						consq: purpose	
42	Introduction	Evidence B	12.2		to improve care and access to services.		
43				simil: rework			
44	Introduction	Evidence B	13.1		First" aim to reduce unnecessary face to face contact between patients and healthcare professionals.[21]		
45							

#	Section	Type	Ref	Relation	Text	Note
46	Introduction	Evidence B	14.1		Many people with body dysmorphic disorder report that one important **reason** for not seeking treatment is related to feelings of shame and stigma [[associated with their concerns about	logical metaphor: noun as external cause
47				consq: conclude		
48	Introduction	Evidence B	14.2		(**thus**) making telecare options potentially suitable.[19,20]	
49				simil: rework		
50	Introduction	Evidence B	15.1		(**e.g.**) Internet based CBT is a burgeoning area of mental health [[aimed at increasing access to specialized behavioural treatments]].	
51				simil: rework		
52	Introduction	Evidence B	16.1		(**e.g.**) In some countries (such as Sweden, Australia, and the Netherlands) internet based CBT has been implemented as part of the regular	
53						add
54	Introduction	Evidence B	16.2		|| **and** is efficacious and cost effective for a wide range of mental health disorders.[23,24]	
55				add	*(unpacked: In order to increase access...)*	
56	Introduction	Evidence B	17.1		(**in addition**) **With the primary aim** of increasing access to evidence based care for body dysmorphic disorder,	
57						consq: purpose
58	Introduction	Evidence B	17.2		we recently developed a therapist guided internet based CBT programme for body dysmorphic disorder (BDD-NET).	
59						add
60	Introduction	Evidence B	18.1		(**and**) In a pilot study, this was found to be safe, highly acceptable to patients, and potentially efficacious.[25]	
61						
62	Introduction	Evidence B	19.1		(**and**) Crucially, the treatment required only a fraction of the therapist time [[associated with regular CBT]].	add
63				consq: conclude		
64	Introduction	Response	20.1		(**thus**) We evaluated the efficacy of BDD-NET [[compared with online supportive therapy in the management of adults with body dysmorphic disorder]].	

Line	Section	Subsection	Code	Connector	Relation	Text	Relation (right)
65							
66	Introduction	Response	21.1			Supportive therapy was chosen as a control	
67					consq: justify		
68	Introduction	Response	21.2			**as** most patients report that they receive non-specific talking therapy when they seek help.[19]	
69							
70	Introduction	Response	22.1			We hypothesised that BDD-NET would be superior to online supportive therapy in reducing symptoms, as well as other psychiatric symptoms, || and improve quality of life.	
71							
72	**Method**					**Method**	
73							
74	**Method**	Study design				**Trial design**	
75				(i.e.)	simil: rework		
76	Method	Study design	23.1			This was a single blind parallel group superiority trial [[conducted at Karolinska Institutet from November 2013 to January 2015]].	
77					simil: rework		
78	Method	Study design	24.1			(**i.e.**) Participants were randomly assigned to 12 weeks of BDD-NET (n=47) or online supportive therapy (n=47) in a 1:1 ratio without restriction.	
79							time: succ
80	Method	Study design	25.1			(**then**) Both groups were followed for three months after the end of treatment (six months from	
81							
82	Method	Study design	26.1			This follow-up point was not included in the trial registration (clinicaltrials.gov) because of an administrative error	
83							
84	Method	Study design	26.2		consq: concession	|| **but** was included in the original study protocol.	
85							time: succ
86	Method	Study design	27.1			(**then**) Participants [[randomised to supportive therapy]] were offered BDD-NET after the six month follow-up assessments.	
87							
88	Method	Study design	28.1			No changes to methods were made	
89							time: succ
90	Method	Study design	28.2			**after** the trial started.	
91							

92	Method	Study design	29.1			The study is reported in accordance to the Consolidated Standards for Reporting Trials (CONSORT) statement for non-pharmacological treatments.[26]	
93							
94	Method	Participant selection				*Participants*	
95				(i.e.)	simil: rework		
96	Method	Participant selection	30.1			Eligible participants were individuals with access to the internet, aged 18 or over, and with a principal diagnosis of body dysmorphic disorder according to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5),[1] with a score of at least 20 on the modified Yale-Brown obsessive-compulsive scale (BDD-YBOCS).[27]	
97							diff
98	Method	Participant selection	31.1			(whereas) Exclusion criteria were changes in psychotropic drug treatment within two months before enrolment, completed CBT for body dysmorphic disorder within the past 12 months, current substance dependence, bipolar disorder or psychosis, acute suicidal ideation, a severe personality disorder [[that could jeopardize participation in treatment (such as borderline personality disorder with self harm)]], and concurrent psychological treatment.	
99							
100	Method	Participant selection	32.1			(and) Participants [[who were taking psychotropic drugs || and had been taking a stable dose for at least two months before enrolment]] were asked to keep their dose stable during the study period.	add
101							
102	Method	Participant selection				*Recruitment and determination of eligibility*	
103							
104	Method	Participant selection	33.1		simil: rework	(i.e.) Participants were recruited from all over Sweden.	
105							

106	Method	Participant selection	34.1		simil: rework	(i.e.) Flyers were distributed to psychiatrists and general practitioners throughout Sweden with information about the study.		
107							add	
108	Method	Participant selection	35.1			In addition, the study was advertised in national newspapers.		
109							time: succ	
110	Method	Participant selection	36.1			(then) Interested applicants had to register on the study's secure website		
111							add	
112	Method	Participant selection	36.2			‖ and complete an online screening [[consisting of the Montgomery-Åsberg depression rating scale self report (MADRS-S),[28] alcohol use disorders identification test,[29] drug user disorders identification test,[30] body dysmorphic disorder questionnaire,[31] and general background information]].		
113					consq: justify			
114	Method	Participant selection	37.1			(because) The body dysmorphic disorder questionnaire is a screening instrument [[that has shown excellent sensitivity and specificity]].[31]		
115							time: succ	
116	Method	Participant selection	38.1			(then) Potentially suitable participants underwent a structured diagnostic interview with a clinical psychologist or with a trained student in the final semester of a five year clinical psychology programme.		
117					simil: rework			
118	Method	Participant selection	39.1			(more precisely) The interviews were conducted over telephone, which is a reliable administration format for structured psychiatric assessments.[32]		Implied consq: justify of the choice of methodology in the hypotactic elaborating clause
119								
120	Method	Participant selection	40.1		simil: rework	(i.e.) To establish a diagnosis of body dysmorphic disorder,		
121							consq: purpose	
122	Method	Participant selection	40.2			we used the structured clinical interview for DSM-IV axis I disorders, with an added question about the presence of repetitive behaviours		

#									Text			
123										consq: purpose	Implied consq: justify
124	Method	Participant selection	40.3						to reflect the updates made to the diagnostic criteria of body dysmorphic disorder in DSM-5.		
125										time: succ	
126	Method	Participant selection	41.1						(then) The mini-international neuropsychiatric interview was used		
127										consq: purpose	
128	Method	Participant recruitment	41.2						to determine the presence of other comorbid psychiatric disorders.[33]		
129											
130	Method	Participant selection	42.1						All assessors had received extensive training in structured diagnostic interviews.		
131											
132	Method	Participant selection	43.1						To ensure reliability of diagnostic procedure and eligibility criteria,		
133										consq: purpose	
134	Method	Participant selection	43.2						a consultant psychiatrist reviewed each case		
135										add	
136	Method	Participant selection	43.3						‖ and made the final decision on enrolment.		
137											
138	Method	Interventions							Interventions		
139											
140	Method	Interventions							BDD-NET		
141											
142	Method	Interventions	44.1						BDD-NET is delivered through a tailored online platform with a dedicated hospital server with encrypted traffic and an authentication login function		
143										consq: purpose	
144	Method	Interventions	44.2						to guarantee participants' confidentiality.		
145					simil: rework							
146	Method	Interventions	45.1						(e.g.) Treatment lasted 12 weeks,		
147										add	
148	Method	Interventions	45.2						‖ and none of the participants had any face to face contact with a therapist.		
149											

150	Method	Interventions	46.1			The treatment protocol is based on a CBT model for body dysmorphic disorder, [[emphasising the role of negatively reinforced avoidance and safety seeking behaviours (such as mirror checking and camouflaging perceived physical defects) as maintaining factors of body dysmorphic disorder]].	
151							
152	Method	Interventions	47.1			The treatment protocol has been validated in a previous trial,	
153							add
154	Method	Interventions	47.2			|| and the treatment effects are comparable with those [[gained in traditional face to face CBT]].[25]	
155							
156	Method	Interventions	48.1			The main intervention in BDD-NET is systematic exposure to fear [[eliciting situations or events combined with response prevention until anxiety and urges to ritualise subside (such as leaving home and refraining from compulsive mirror checking)]].	
157				smil: rework			
158	Method	Interventions	49.1			(i.e.) In total, BDD-NET consists of eight interactive modules delivered over 12 weeks, with the first five modules [[containing the core treatment components]].[23]	
159				simil: rework			
160	Method	Interventions	50.1			(i.e.) Each module is devoted to a special theme	
161							add
162	Method	Interventions	50.2			|| and covers psychoeducation, a cognitive behaviour conceptualization of body dysmorphic disorder, cognitive restructuring, exposure and response prevention, more on exposure and response prevention, values based behaviour change, difficulties encountered during treatment, and prevention of relapse.	
163							
164	Method	Interventions	51.1			To progress to the next module,	
165							consq: purpose

#	Level	Category	Section	Marker	Relation	Text	Annotation
166	Method	Interventions	51.2			participants have to complete homework assignments (such as reading text material, answering a quiz at the end of each module, filling out worksheets, or doing exposure and response prevention)	
167							add
168	Method	Interventions	51.3			|| and report to their therapist.	
169				(e.g.)	simil: rework		
170	Method	Interventions	52.1			The participants had contact with an identified therapist throughout the entire treatment	
171							consq: means
172	Method	Interventions	52.2			(by) using a built-in email system on the BDD-NET webpage.	
173					simil: rework		
174	Method	Interventions	53.1			(i.e.) Participants could log in	
175							add
176	Method	Interventions	53.2			|| and send emails at any time.	
177							time: succ
178	Method	Interventions	54.1			(then) All homework assignments and questions from the participants were reviewed	
179							add
180	Method	Interventions	54.2			|| and answered within 36 hours, except on weekends.	
181					simil: rework	(unpacked: The therapist mainly guided...)	
182	Method	Interventions	55.1			(i.e.) The role of the therapist was mainly to guide||	
183						(and coached)	add
184	Method	Interventions	55.2			and coach the participant throughout the	
185						(provided)	add
186	Method	Interventions	55.3			(and) provide feedback on homework assignments||	
187						(answered)	add
188	Method	Interventions	55.4			(and) answer questions from the participants||	
189						(and consecutively granted)	add
190	Method	Interventions	55.5			and consecutively grant access to the next treatment module	
191							time: succ
192	Method	Interventions	56.1			(then) The participants were notified by an automated text message (SMS)	
193							time: succ
194	Method	Interventions	56.2			when they had a new email in the treatment platform from their therapist.	

195							
196	Method	Interventions	57.1		The therapists [[guiding the participants through the treatment]] were four clinical psychology students [[who had completed their basic clinical training (320 hours)]] || [[and had provided therapy in milder cases under the supervision of a senior psychologist]].		
197							
198	Method	Interventions	58.1		The clinical psychology students had no prior experience of treating body dysmorphic disorder		
199				consq: concession			Consq: concession reading because 'but' is used to indicate the therapists' reliability despite their lack of experience.
200	Method	Interventions	58.2		|| **but** were closely supervised by the lead author (JE) with weekly meetings throughout the trial.		
201							
202	Method	Interventions	59.1		The duration of therapist contact and sent emails was automatically recorded by the BDD-NET platform.		
203							
204	Method	Interventions	60.1		Median therapist time [[spent weekly per participant reading and answering emails]] was 13.2 minutes.		
205							
206	Method	Interventions	61.1		**To** ensure treatment integrity and adherence to protocol		
207						consq: purpose	
208	Method	Interventions	61.2		the lead author monitored the messages [[sent by the therapists throughout the entire treatment]],		
209							
210	Method	Interventions	61.3		|| **and** provided supervision.	add	
211							
212	Method	Interventions	62.1		Appendix 1 shows a screenshot of BDD-NET.		
213							
214	Method	Interventions			***Online supportive therapy***		
215				(or)		alt	
216	Method	Interventions	63.1		Participants had access to the integrated email system on the BDD-NET webpage and unlimited access to an identified therapist.		

#						
217				simil: rework		
218	Method	Interventions	64.1		(i.e.) They were given the opportunity to talk freely about their experiences, thoughts, and feelings about body dysmorphic disorder and [[how it affected their life]].	
219				simil: rework		
220	Method	Interventions	65.1		(i.e.) The therapist sent an email at least once a	
221						consq: purpose
222	Method	Interventions	65.2		(with a view to) encouraging the participant to discuss distressing life events	
223						add / consq: purpose
224	Method	Interventions	65.3		and to promote problem solving	
225				simil: rework		
226	Method	Interventions	66.1		(i.e.) The therapists used skills drawn from counselling techniques	
227						add
228	Method	Interventions	66.2		|| and included minimal encouragers, reflecting, empathising, and summarising.	
229				simil: rework		
230	Method	Interventions	67.1		(i.e.) All emails from the participants were reviewed	
231						add
232	Method	Interventions	67.2		|| and answered within 36 hours,	
233						add
234	Method	Interventions	67.3		|| and participants were notified by an automated text message	
235						time: succ
236	Method	Interventions	67.4		when they had a new email in the treatment	
237				simil: rework		
238	Method	Interventions	68.1		(i.e.) Treatment lasted 12 weeks,	
239						add
240	Method	Interventions	68.2		|| and none of the participants had any face to face contact with a therapist.	
241						
242	Method	Interventions	69.1		Non-directive supportive therapy [[delivered via the internet]] has been shown to reduce symptoms [[associated with obsessive compulsive disorder]],[34]	
243				consq: concession		
244	Method	Interventions	69.2		though there are no reports of its efficacy for body dysmorphic disorder.	

245							
246	Method	Interventions	70.1		consq: conclusion	(thus) The supportive therapy served as a control for caregiver attention and the possible anxiety alleviating effect of sharing one's distress with a	
247							
248	Method	Interventions	71.1			The same therapists [[that guided participants through BDD-NET]] delivered the supportive therapy.	
249					simil: rework		
250	Method	Interventions	72.1			(i.e.) Therapists spent a median of 6.3 minutes per participant per week	
251							consq: means
252	Method	Inteventions	72.2			(by) reading ||	
253							add
254	Method	Interventions	72.3			and answering emails.	
255							
256	Method	Interventions	73.1			To ensure treatment integrity,	
257							consq: purpose
258	Method	Interventions	73.2			the lead author monitored the messages [[sent by the therapists]] throughout the entire treatment	
259							add
260	Method	Interventions	73.3			|| and provided supervision.	
261							
262	Method	Interventions	74.1			No therapist drift (deviation from treatment protocol) was detected in either of the groups.	
263				(after)			time: succ	
264	Method	Rand&Mask				*Randomisation and masking*	The use of an activity: enacted: manner entities (*randomisation and masking*) enables the time: succ reading
265							
266	Method	Rand&Mask	75.1			Participants were randomised on a 1:1 ratio with simple randomisation with no constraints.	
267					simil: rework		
268	Method	Rand&Mask	76.1			(i.e.) To prevent potential selection bias [[related to the randomisation procedure]],	consq: purpose
269							
270	Method	Rand&Mask	76.2			an external party [[not involved in the inclusion process]] used a true number service (www.random.org).	

271				simil: rework			
272	Method	Rand&Mask	77.1		(i.e.) Allocation concealment was ensured through randomisation		
273						time: succ	
274	Method	Rand&Mask	77.2		after the decision [[to include each participant]] had been made.		
275						*Unpacked: Immediately after the participants had been randomised,*	
276	Method	Rand&Mask	78.1		Immediately after randomisation,		
277						time: succ	
278	Method	Rand&Mask	78.2		participants received information about [[which treatment they had been allocated to]] || [[and how they could log on to the secure website]].		
279						time: succ	
280	Method	Rand&Mask	79.1		(afterwards) Assessors in the trial remained masked to treatment allocation at baseline and three and six month follow-up.		
281						diff	
282	Method	Rand&Mask	80.1		(but) Because of the nature of the intervention, participants and therapists were not blinded to treatment.		
283				(simultaneously)		time: simul	
284	Method	Outcomes			*Assessment points and outcomes*		The use of an enacted activity entity (*assessment*), time entity (*point*), and a semiotic result activity (*outcomes*) enables the time: simul reading
285							
286	Method	Outcomes	81.1		All participants were assessed at baseline		
287						add; time: succ	
288	Method	Outcomes	81.2		|| and then received 12 weeks of treatment.		
289						time: succ	
290	Method	Outcomes	82.1		(then) Follow-up times were three and six months from baseline (after treatment and three months after treatment, respectively).		
291						time: succ	
292	Method	Outcomes	83.1		in the supportive therapy group were offered BDD-NET		
293						add	

294	Method	Outcomes	83.2			‖ **and** reassessed		
295							time: succ	
296	Method	Outcomes	83.3			**after** receiving 12 weeks of additional treatment with BDD-NET.		
297							add	
298	Method	Outcomes	84.1			Participants **also** completed online self report measures at these time points,		continuative
299				consq: justify				
300	Method	Outcomes	84.2			(**as**) the method has been shown to be as reliable and as valid as written administration.[35,36]		
301								
302	Method	Outcomes	85.1			The primary outcome was change in severity of symptoms of body dysmorphic disorder [[assessed with the BDD-YBOCS [[administered by a clinician]]]].[27]		
303				consq: justify		*Implied: We used BDD*		
304	Method	Outcomes	86.1			(**since**) The BDD-YBOCS can be considered the ideal for assessing symptom severity		
305							add	
306	Method	Outcomes	86.2			‖ **and** has a total score of 0-48, with a higher score [[indicating more severe disorder]].		
307								
308	Method	Outcomes	87.1			Secondary outcomes included responder status [[defined as an empirically derived cut off point of ≥30% reduction from baseline on the BDD-YBOCS]].[37]		
309								
310	Method	Outcomes	88.1			Remission was defined as patients [[who no longer met diagnostic criteria for body dysmorphic disorder]].		
311								
312	Method	Outcomes	89.1			Depressive symptoms were assessed with the MADRS-S.[28]		
313								
314	Method	Outcomes	90.1			Clinician rated global functioning and improvement was assessed with the global assessment of functioning scale (GAF)[38] and the clinical global improvement scale (CGI-I).[39]		
315								

#							Text		
316	Method	Outcomes	91.1				Quality of life was assessed with the EQ5D EuroQol (EQ5D).[40]		
317									
318	Method	Outcomes	92.1				All outcomes other than BDD-YBOCS and MADRS-S at three months were not pre-specified in the registration at clinicaltrials.gov because of an administrative error		
319					consq: concession				
320	Method	Outcomes	92.2				|| **but** were included in the original trial protocol [[approved by the regional ethics committee before the start of the trial]].		
321									
322	Method	Outcomes	93..1				**To** ensure quality of assessments,	consq: purpose	
323									
324	Method	Outcomes	93.2				clinicians in this trial practiced together on case examples with excellent reliability between raters (intraclass correlation 0.95, 95% confidence interval 0.89 to 0.98).		
325									
326	Method	Outcomes	94.1				The occurrences of adverse events were recorded mid-treatment and after treatment with a self report form.[41]		
327									
328	Method	Outcomes	95.1				Treatment credibility and expectancy of improvement were recorded at week two with the C scale [[(included post hoc after trial registration)]].[42]		
329									
330	Method	Ext.involvement					**Patient involvement**		
331									
332	Method	Ext.involvement	96.1				We received input from patients from the BDD-NET pilot trial on the treatment material.		
333					consq: concession				
334	Method	Ext.involvement	97.1				(**however**) No patients were involved in setting the research question or the outcome measures,		
335								add	
336	Method	Ext.involvement	97.2				|| **nor** were they involved in developing plans for recruitment, design, or implementation of the study.		

#					Text	
337						
338	Method	Ext.involvement	98.1		No patients were asked to advise on interpretation or writing up of results.	
339						
340	Method	Ext.involvement	99.1		We carefully assessed the burden of the trial interventions on the patients	
341						consq: means
342	Method	Ext.involvement	99.2		by collecting information about adverse events, quality of life, and time [[spent on the treatment]].	
343						
344	Method	Ext.involvement	100.1		We plan to disseminate the results of the research to study participants and to the Swedish OCD Foundation.	
345						
346	Method	Statistics			***Power calculation and statistical analysis***	
347						
348	Method	Statistics	101.1		We powered the study	
349						
350	Method	Statistics	101.2		to be able to detect at least a medium standardised effect size (Cohen's d)	consq: purspose
351						
352	Method	Statistics	102.1		We based power calculations on a previous pilot trial of BDD-NET and the efficacy of online supportive therapy for obsessive compulsive disorder.[25 34]	
353				simil: rework		
354	Method	Statistics	103.1		(i.e.) A sample size of 39 per group was required	
355						consq: purpose
356	Method	Statistics	103.2		to give 80% power and a two sided 5% significance for detecting a mean difference between groups of at least 4 and a standard deviation of 6.24 on the BDD-YBOCS between BDD-NET and supportive	
357				consq: concession		
358	Method	Statistics	104.1		(however) We anticipated a potential 10% dropout rate,	
359				consq: conclude		
360	Method	Statistics	104.2		(thus) giving a planned sample size of at least 44 per group, or 88 in total.	
361						
362	Method	Statistics	105.1		There were no planned interim analyses or rules for stopping.	

363				(then)			*Unpacked: Analyses were performed*		time: succ	
364	Method	Statistics	106.1				Analyses were			
365							*Unpacked:* **by** *using an intention-to treat method in which participants were analysed...*		consq: means	
366	Method	Statistics	106.2				**by** intention to treat with participants [[analysed in the group [[to which they had been randomised]]]].			
367					simil: rework					
368	Method	Statistics	107.1				(**i.e.**) Missing data were deemed to be missing at random			
369									consq: means	
370	Method	Statistics	107.2				**by** using Little's missing completely at random test.			
371									time: succ	
372	Method	Statistics	108.1				(**then**) Linear mixed models with maximum likelihood estimations were used			
373									consq: purpose	
374	Method	Statistics	108.2				**to** evaluate the effect of treatment group on the different outcomes.			
375					consq: justify					
376	Method	Statistics	109.1				(**because**) Such models take into account the differences in rate of change and differences in trajectories of change between individuals with repeated responses			
377									add	
378	Method	Statistics	109.2				|| **and** use all the available data for each participant.[43]			
379					simil: rework					
380	Method	Statistics	110.1				treatment indicator variable (supportive therapy/BDD-NET), a time indicator variable (three or six months), and an interaction effect of treatment × time			
381									consq: purpose	
382	Method	Statistics	110.2				**to** allow for differential change between the two groups from the three to the six month follow-up.			
383					simil: rework					
384	Method	Statistics	111.1				(**i.e.**) Baseline (before treatment) scores on each outcome measure were included as covariates.			
385									add	
386	Method	Statistics	112.1				(**and**) Participant varying intercepts were included as a random effect in the model.			
387										

#					Text		
388	Method	Statistics	113.1		As therapist support time varied between the two treatment arms,		
389				consq: justify			
390	Method	Statistics	113.2		model.		
391							
392	Method	Statistics	114.1		Because it did not predict outcome, (P=0.11-0.98)		
393				consq: jutify		consq: concession	
394	Method	Statistics	114.2		, however, it was dropped from the final model.		
395						add	
396	Method	Statistics	115.1		We (also) used χ2 tests for categorical data and independent t tests		continuative
397						consq: purpose	
398	Method	Statistics	115.2		for assessing differences between groups		
399						time: simul	
400	Method	Statistics	115.3		variable.		
401						time: succ	
402	Method	Statistics	116.1		participants in the supportive therapy arm [[who later crossed over to BDD-NET after the six month follow-up]]		
403						consq: means	
404	Method	Statistics	116.2		(by) using paired t tests.		
405						time: succ	
406	Method	Statistics	117.1		(then) Effect sizes within and between groups were calculated as Cohen's d.		
407							
408	Method	Statistics	118.1		All statistical analyses were done in STATA 13.1.		

Appendix 8 Sample ATTITUDE and GRADUATION analysis (BMJ-1)

Key (following Hood, 2010; Hood & Martin, 2005; Martin & White, 2005)

ATTITUDE **Bold font: Target** (appraised item) + 'positive attitude' ins. = inscribed attitude t. = lexical token invoking attitude - 'negative attitude' inv. = invoked attitude			GRADUATION
pink font: **Type of affect**	**blue font:** **Type of appreciation**	**green bold font:** **Type of judgement**	underlined
des = desire hap = un/happiness sec = in/security sat = dis/satisfaction	reac: qual = react: quality reac: imp = react: impact comp:bal = composition: balance comp:com = composition: complexity val = valuation	norm = normality cap = capacity ten = tenacity ver = veracity prop = propriety	[force] intense: quality/occurrence/modality = intensifying: quality/occurrence/modality quant: amount = quantifying: amount extent: proximity/distribution: space/time [focus] valeur: authenticity/specificity fulfil: completion/actualisation = fulfilment: completion/actualisation

Figure #	Text	Target/Emoter	Appraising item	type	Graduation item	type
1.1	**Body dysmorphic disorder (BDD)** is a **psychiatric disorder** [[characterised by a <u>pervasive</u> **preoccupation with perceived defects in physical appearance** [[accompanied by avoidance]] and <u>time consuming</u> **compulsive behaviours**, such as **mirror gazing** and <u>excessive</u> **camouflaging** to hide perceived defects]].[1]	**psychiatric**	**disorder**	-reac: impact -cap (inv.)		
		Body dysmorphic disorder (BDD)	**psychiatric disorder**	-reac: impact		
		preoccupation with perceived defects in physical appearance		-val (inv.)	<u>pervasive</u>	extent: distribution: space
		behaviours (of people with BDD)	**compulsive**	-val -cap (inv.)	<u>time consuming</u>	extent: distribution: time

		mirror gazing	time consuming **compulsive** behaviours	-val		
		camouflaging	time consuming **compulsive** behaviours	-val	excessive	quant: amount
2.1	If left untreated,					
2.2	**this** is a chronic and unremitting **disorder** [[that is associated with **functional impairment** across multiple **life domains**, relatively high rates of **psychiatric admissions to hospital, substance dependence, and suicidality**]].[2-4]	**This (BDD)**	**disorder**	-reac: impact -cap (inv.)	chronic	extent: distribution: time
					unremitting	extent: distribution: time
		functional	**impairment**	-reac: impact -cap (inv.)	across multiple **life domains**	extent: distribution: space + quant: amount
		psychiatric admissions to hospital, || substance dependence, || and suicidality]		-val (inv.) -cap (inv.)	relatively high rates	quant: amount (sub-modified by intense: quality)
3.1	Although the disorder is **often underdetected**	**(medical community)**		-cap (inv.)	**often**	intense: modality
					underdetected	intense: occurrence
3.2	and **underdiagnosed** within the mental health services,[5,6]	**(medical community)**		-cap (inv.)	**often**	intense: modality
					underdiagnosed	intense: occurrence
3.3	epidemiological studies show that **it** is a common mental health **problem**, with a **prevalence** ranging from 0.7% to 2.2% in the general population.[7-10]	**It (BDD)**	**problem**	-val	epidemiological studies show	fulfil: actualisation
					common	quant: amount + extent: distribution: space
		prevalence			from 0.7% to 2.2% in the general population	quant: amount + extent: distribution: space

4.1	**It** is <u>common</u> for those with body dysmorphic disorder **[[to seek <u>non-psychiatric</u> care, such as dermatological treatment or plastic surgery, in an attempt to "fix" the perceived defects;]]**	**It ([[to seek <u>non-psychiatric</u> care, such as dermatological treatment or plastic surgery, in an attempt to "fix" the perceived defects;]]**			<u>common</u>	intense: modality
		care			**<u>non-psychiatric</u>**	valeur: specificity
4.2	however, **such interventions <u>rarely</u> work**	**such interventions**	t. **<u>rarely</u> work.**	-val (inv.)	**<u>rarely</u>**	intense: modality
4.3	and <u>can</u> **lead to** a **deterioration** of **symptoms.**[11,12]	**lead to**			<u>can</u>	fulfil: actualisation
		symptoms	**deterioration**	-val		
		such interventions	**deterioration** of **symptoms.**	-val		
5.1	Evidence based treatments for body dysmorphic disorder include **psychopharmacological treatment and cognitive behaviour therapy (CBT).**[13-16]	**psychopharmacological treatment and cognitive behaviour therapy (CBT)**	t. Evidence based treatments	+val (inv.)		
6.1	**Guidance** from the <u>National Institute</u> for Health and Clinical Excellence (NICE) **recommends** that adults <u>should</u> be offered the choice of either **a course of a selective serotonin response inhibitor** or **specialised CBT [[that deals with the key features of the disorder]].**[17]	**Institute**		+cap (inv.)	<u>National</u>	extent: distribution: space
					<u>for Health and Clinical Excellence (NICE)</u>	valeur: specificity
		Guidance	t. from the <u>National Institute</u> for Health and Clinical Excellence (NICE)	+val (inv.)		
		a course of a selective serotonin response inhibitor;	**recommends**	+val		
		specialised CBT	**recommends**	+val		
			t. **deals with the key features of the disorder**	+val (inv.)		
		be offered			<u>should</u>	intense: modality

#	Text					
7.1	There is, however, a **gap** between supply and demand of **CBT** because of <u>various</u> **factors**, such as a <u>lack</u> of **trained therapists**, direct and indirect **costs** [[associated with treatment]], and **geographical barriers** [[that prevent people with body dysmorphic disorder from receiving specialized CBT]].[18-20]	**CBT implementation**	**gap** between supply and demand	-comp:bal		
		factors	a **gap** between supply and demand of CBT	-val	<u>various</u>	quant: amount
		costs (i.e. factor)	a **gap** between supply and demand of CBT	-val		
		therapists	<u>lack</u> of **trained**	-cap	<u>lack</u>	quant: amount
		geographical	**barriers**	-val		
8.1	In two surveys, <u>only 10-17%</u> of **people with body dysmorphic concerns** reported that they had received an empirically supported psychotherapy (such as **CBT**),	**(ratio) between supply and demand of CBT]**	<u>only 10-17%</u> of **people with body dysmorphic concerns** reported…	-val (inv.)	<u>only 10-17%</u>	quant: amount (intensified)
		people	**concerns**	-sec		
		CBT	t. empirically supported	+val (inv.)		
8.2	|| and <u>19-34%</u> reported that they had received an SSRI.[19,20]	**(ratio) between supply and demand of CBT**	<u>19-34%</u> reported…	-val (inv)	<u>19-34%</u>	quant: amount
9.1	Thus, one of NICE's **key priorities** for implementation — [[namely, **that <u>each primary care</u> trust, <u>mental healthcare</u> trust, and <u>children's</u> trust [[that provides mental health services]] <u>should</u> have access to a specialist <u>multidisciplinary</u> team [[offering age appropriate care]]]]—is currently far from reality**.[17]	**that <u>each primary care</u> trust, <u>mental healthcare</u> trust, and <u>children's</u> trust [[that provides mental health services]] <u>should</u> have access to a specialist <u>multidisciplinary</u> team [[offering age appropriate care]]**	**key priorities**	+val		
					far from reality	fulfil: actualisation
		trust			**<u>each primary care/healthcare/children's</u>**	extent: distribution: space
					<u>should</u> have	intense: modality
		team	**specialist [[offering age appropriate care]]**	+cap	**<u>multidisciplinary</u>**	extent: distribution: space
		care	**age appropriate**	+val		
10.1	<u>The growth</u> in **demand for mental healthcare** <u>exceeds</u>	<u>The growth</u> in **demand for mental healthcare**			<u>The growth</u>	quant: amount

	available National Health Service (NHS) resources <u>in the United Kingdom,</u>	**National Health Service (NHS) resources**	Exceeds **available**	-val	<u>exceeds</u>	quant: amount
					<u>in the United Kingdom</u>	extent: distribution: space
10.2	‖ and this **gap** <u>is likely</u> **<u>to increase</u>** up to 2020.[21]	<u>The growth</u> in **demand for mental healthcare** <u>exceeds</u> **available National Health Service (NHS) resources** <u>in the United Kingdom,</u>	**gap**	-comp:bal	<u>is likely to</u> **increase**	fulfil: actualisation
					<u>increase</u>	quant: amount
					<u>up to 2020</u>	extent: proximity: time
11.1	**Cost pressures** <u>require</u> that providers find **innovative** ways [[to deliver services]].	**Cost**	**pressures**	-val	<u>require</u> [[that…	intense: modality
		ways [[to deliver services]].	**innovative**	+val		
12.1	<u>The UK government's mental health</u> **strategy** "no health without mental health"[22] **recommends** the **<u>increased</u> use of information and communication technology**	**strategy**		+val (inv.) +cap (inv.)	<u>The UK government's mental health</u>	extent: distribution + proximity: space (relevance for the BMJ journal) + valeur: specificity
		the <u>increased</u> use of information and communication technology	**recommends**	+val	**<u>increased</u>**	quant: amount
12.2	to **improve** care and access to services.	**care and access to services.**	**improve**	+val		
13.1	**<u>UK government</u> initiatives such as "Digital First"** aim to <u>reduce</u> **unnecessary** face to face contact between patients and healthcare professionals.[21]	**initiatives**		+val (inv.) +cap (inv.)	**<u>UK government</u>**	extent: distribution + proximity: space (relevance for the BMJ journal) +

#	Quote	Appraised	Attitude	Polarity	Graduation trigger	Graduation
						valeur: specificity
		face to face contact [between patients and healthcare professionals]	unnecessary	-val	reduce	quant: amount
		UK government initiatives such as "Digital First"	t. aim to reduce…	+val (inv.)		
14.1	**Many people with body dysmorphic disorder** report that one **important** reason for not seeking treatment is related to feelings of shame and stigma [[associated with **their concerns about appearance**]],	**Many people with body dysmorphic disorder**	(feel) shame	-sec	**Many**	quant: amount
		reason for not seeking treatment	important	+val		
		people with body dysmorphic disorder	concerns about appearance	-sec		
		their concerns about appearance	stigma	-val -prop (inv.)		
14.2	making **telecare options potentially** suitable.[19,20]	telecare options	suitable	+val	**potentially**	intense: modality
15.1	**Internet based CBT** is a burgeoning **area** of mental health [[aimed at increasing **access to specialized behavioural treatments**]].	**Internet based CBT**	t. is a burgeoning **area** of mental health	+val (inv.)	**Internet based**	extent: proximity: space
					burgeoning	quant: amount
		Internet based CBT	t. aimed at increasing **access to specialized behavioural treatments**	+val (inv.)		
		access to specialized behavioural treatments			increasing	quant: amount
16.1		internet based CBT		+val (inv.)	some **countries**	quant: amount

	In some **countries** (such as Sweden, Australia, and the Netherlands) **internet based CBT** has been implemented as part of the regular **healthcare system**				In some **countries** (such as Sweden, Australia, and the Netherlands)	extent: distribution: space
					regular **healthcare system**	valeur: specificity
16.2	and is **efficacious** and **cost effective** for a wide range of **mental health disorders**.[23,24]	**internet based CBT**	**efficacious** **cost effective**	+val (*2)	for a wide range of **mental health disorders**	quant: amount (intensified)
17.1	With the **primary aim** of increasing **access to evidence based care for body dysmorphic disorder**, we recently developed a therapist guided internet based **CBT programme** for body dysmorphic disorder (BDD-NET).	**aim** of increasing **access to evidence based care for body dysmorphic disorder**	**primary**	+val	increasing	quant: amount
		care for body dysmorphic disorder	t. **evidence based**	+val (inv.)		
		CBT programme			recently developed	extent: proximity: time
					a therapist guided internet based…for body dysmorphic disorder (BDD-NET)	valeur: specificity
18.1	In a pilot **study**, **this** was found **to be safe**, highly **acceptable** to patients, and **potentially efficacious**.[25]	**study**			pilot	quant: amount
		this (BDD-NET)			found **to be**	fulfil: actualisation
			safe	+val		
			acceptable	+val	highly	intense: quality
			efficacious	+val	**potentially**	intense: modality
19.1	Crucially, **the treatment** required only a fraction of **the therapist time [[associated with regular CBT]]**.	**the treatment**	t. required only a fraction of **the therapist time [[associated with regular CBT]]**	+val (inv.)	Crucially	intensifying
					only a fraction of	extent: distribution: time (intensified)
20.1	We evaluated the **efficacy of BDD-NET** [[compared with online **supportive therapy** in the	**efficacy of BDD-NET**			in the management of adults with body dysmorphic disorder	valeur: specificity

	management of adults with body dysmorphic disorder]]	supportive therapy			online	extent: proximity: space
21.1	**Supportive therapy** was chosen as a control					
21.2	as most **patients** report that they receive non-specific **talking therapy** when they seek help.[19]	**patients**			most	quant: amount
		talking therapy / supportive therapy	most **patients** receive	+val (inv.)	non-specific	valeur: specificity
22.1	We hypothesised that **BDD-NET** would **be superior** to online supportive therapy in reducing symptoms, as well as other psychiatric symptoms, and **improve quality of life**.	**BDD-NET**	superior	+val		intense: quality
					would **be**	fulfil: actualisation
		BDD-NET	t. **improve quality of life**.	+val	would	fulfil: actualisation
		quality of life	**improve**	+val		
23.1	This was a single blind parallel group superiority **trial** [[conducted at Karolinska Institutet from November 2013 to January 2015]].	**trial**		+val (inv.)	single blind parallel group superiority	valeur: specificity
24.1	**Participants** were randomly assigned to 12 weeks of **BDD-NET** (n=47) or **online supportive therapy** (n=47) in a 1:1 ratio without restriction.					
25.1	Both groups were followed for three months after the end of treatment (six months from baseline).					
26.1	This **follow-up point** was not included in the trial registration (clinicaltrials.gov) because of an **administrative error**	**administrative**	error	-cap		
		follow-up point		-cap (inv.)	This	valeur: specificity
					was not **included**	fulfil: actualisation

26.2	but was included in the original **study protocol**.	**study protocol**	t. but (This **follow-up point**) was included	+val (inv.)	original	extent: proximity: time
27.1	Participants [[randomised to supportive therapy]] were offered BDD-NET after the six month **follow-up assessments**.					
28.1	No **changes** to methods were made	**changes**			No	quant: amount
28.2	after the trial started.					
29.1	The study is reported in accordance to the **Consolidated Standards for Reporting Trials (CONSORT) statement** for non-pharmacological treatments.[26]	(**RCT report**)	t. in accordance to the **Consolidated Standards for Reporting Trials (CONSORT) statement** for non-pharmacological treatments.[26]	+val (inv.).		
		Consolidated Standards for Reporting Trials (CONSORT) statement		+val (inv.)	for non-pharmacological treatments	valeur: specificity
30.1	**Eligible participants** were **individuals** with access to the internet, aged 18 or over, and with a principal **diagnosis of body dysmorphic disorder** according to the Diagnostic and Statistical **Manual of** Mental Disorders, 5th edition (DSM-5),[1] with a **score** of at least 20 on the modified Yale-Brown obsessive-compulsive **scale** (BDD-YBOCS).[27]	**Eligible participants**			aged 18 or over	intense: quality
		Eligible participants / individuals	**diagnosis of body dysmorphic disorder**	-cap (inv.)	principal	valeur: specificity
		Manual		+val (inv.)	Diagnostic and Statistical ... Mental Disorders (DSM-5)	valeur: specificity
					5th edition	extent: proximity: time
		scale		+val (inv.)	Yale-Brown obsessive-compulsive ... (BDD-YBOCS)	valeur: specificity
					modified	valeur: authenticity
		BDD-YBOCS score			at least 20	quant: amount (intensified)
31.1	Exclusion criteria were **changes** in psychotropic drug **treatment** within two months before	**changes**			in psychotropic drug **treatment**	valeur: specificity

	enrolment, completed **CBT** for body dysmorphic disorder within the past 12 months, current **substance dependence**, bipolar disorder or psychosis, **acute suicidal ideation**, a **severe personality disorder** [[that could **jeopardize** participation in treatment (such as **borderline personality disorder** with **self harm**)]], and concurrent psychological **treatment**.				within two months before enrolment	extent: proximity: time
		CBT			for body dysmorphic disorder	valeur: specificity
					within the past 12 months	extent: proximity: time
		substance dependence		-cap (inv.)	current	extent: proximity: time
		suicidal ideation	acute	-val -cap (inv.)		intense: quality
		personality disorder	severe	-val -cap (inv.)		intense: quality
			that could **jeopardize**…	-val		
		participation in treatment	jeopardize	-val	could	fulfil: actualisation
		borderline personality disorder	with self harm	-val -cap (inv.)		valeur: specificity
		treatment			concurrent	extent: proximity: time
					psychological	valeur: specificity
32.1	Participants [[who were taking psychotropic **drugs** || and had been taking a **stable** dose for at least two months before enrolment]] were asked to keep their **dose stable** during the study period.	**drugs**			psychotropic	valeur: specificity
		dose (of psychotropic drugs)	stable	+comp:bal	for at least two months before enrolment	extent: distribution: time (intensified) + extent: proximity: time
		dose (of psychotropic drugs)	stable	+comp:bal	during the study period	extent: distribution: time
33.1	**Participants** were recruited from all over Sweden.	**Participants**			from all over Sweden	intensified extent: distribution: space

34.1	Flyers were distributed to **psychiatrists and general practitioners** throughout Sweden with information about the study.	**psychiatrists and general practitioners**			throughout Sweden	intensified extent: distribution: space
35.1	In addition, the study was advertised in national **newspapers**.	**newspapers**			national	extent: distribution: space
36.1	**Interested** **applicants** had to register on the study's **secure website**	**applicants**	**Interested**	+des		
		website	**secure**	+val		
36.2	and complete an online **screening** [[consisting of the Montgomery-Åsberg depression rating scale self **report** (MADRS-S),[28] alcohol use disorders identification **test**,[29] drug user disorders identification **test**,[30] body dysmorphic disorder **questionnaire**,[31] and general **background information**]].	**screening**			online	extent: proximity: space
		report		+val (inv.)	Montgomery-Åsberg depression rating scale self (MADRS-S)	valeur: specificity
		test		+val (inv.)	alcohol use disorders identification	valeur: specificity
		test		+val (inv.)	drug user disorders identification	valeur: specificity
		questionnaire		+val (inv.)	body dysmorphic disorder	valeur: specificity
		background information			general	valeur: specificity
37.1	**The body dysmorphic disorder questionnaire** is a screening instrument [[that has shown **excellent** sensitivity and specificity]].[31]	**The body dysmorphic disorder questionnaire**	**excellent** sensitivity and specificity	+val	has shown	fulfil: actualisation
					excellent	intense: quality
38.1	**Potentially suitable** participants underwent a structured diagnostic **interview** with a clinical psychologist or with a **trained student** in the final semester of a five year clinical psychology **programme**.	**suitable**			**Potentially**	intense: modality
		interview		+val (inv.)	structured diagnostic	valeur: specificity
		student	**trained**	+cap		

			t. in the final semester of a five year clinical psychology **programme**.	+cap (inv.)	Five year	extent: distribution: time
					clinical psychology	valeur: specificity
39.1	The **interviews** were conducted over telephone, which is a **reliable administration format** for structured psychiatric assessments.[32]	interviews			telephone	valeur: specificity
		telephone **interviews**	**reliable** administration format	+val	for structured psychiatric **assessments**	valeur: specificity
40.1	To establish a **diagnosis of body dysmorphic disorder**,	**diagnosis of body dysmorphic disorder**			establish	fulfil: actualisation
40.2	we used the structured clinical **interview** for DSM-IV axis I **disorders**, with an added **question** about the presence of repetitive **behaviours**	interview		+val (inv.)	the structured clinical … for DSM-IV axis I **disorders**	valeur: specificity
		question			added	quant: amount
					about the presence of repetitive **behaviours**	valeur: specificity
40.3	to reflect the updates made to the diagnostic criteria of body dysmorphic disorder in DSM-5.	an added **question**	t. to reflect the updates	+val (inv.)	updates	extent: proximity: time
41.1	The mini-international neuropsychiatric **interview** was used	interview			The mini-international neuropsychiatric	valeur: specificity
41.2	to determine **the presence** of other comorbid psychiatric **disorders**.[33]	the presence			determine	fulfil: actualisation
		disorders			comorbid psychiatric	valeur: specificity
42.1	All **assessors** had received extensive **training** in structured diagnostic interviews.	assessors	had received extensive **training** in structured diagnostic interviews.	+cap	All	quant: amount
		training		+val (inv.)	extensive	quant: amount
					in structured diagnostic interviews.	valeur: specificity

43.1	To <u>ensure</u> **reliability** of **diagnostic procedure** and **eligibility criteria**,	**diagnostic procedure / eligibility criteria**	**reliability**	+val	<u>ensure</u>	fulfil: actualisation
43.2	a <u>consultant</u> **psychiatrist** <u>**reviewed**</u> <u>each</u> **case**	**psychiatrist**		+cap (inv.)	<u>consultant</u>	intense: quality (titular ranking)
		final decision on <u>enrolment</u>		+val (inv.) +ten (inv.)	<u>**reviewed**</u>	intense: occurrence
					<u>each</u> **case**	quant: amount
43.3	and made the <u>final</u> **decision** <u>on</u> <u>enrolment</u>.	**decision**			<u>final</u> **…** <u>on enrolment</u>	extent: proximity: time + valeur: specificity
44.1	**BDD-NET** is delivered through a <u>tailored</u> <u>online</u> **platform** with a <u>dedicated</u> **hospital server** with **encrypted** **traffic** and an <u>authentication login</u> **function**	**platform**		+val (inv.)	<u>tailored</u>	valeur: specificity
					<u>online</u>	extent: proximity: space
		hospital server		+val (inv.)	<u>dedicated</u>	valeur: specificity
		traffic	**encrypted**	+val		
		function		+val (inv.)	<u>authentication login</u>	valeur: specificity
44.2	to <u>guarantee</u> **participants' confidentiality**.	**BDD-NET**	**participants' confidentiality**	+val	<u>guarantee</u>	fulfil: actualisation
45.1	**Treatment** lasted <u>12 weeks</u>	**Treatment**			<u>12 weeks</u>	extent: distribution: time
45.2	and <u>none</u> of the **participants** had <u>any</u> <u>face to face</u> **contact** <u>with a therapist</u>.	**Treatment**	t. entire figure	+val (inv.)		
		participants			<u>none</u>	quant: amount
		contact			<u>any</u>	quant: amount
					<u>face to face</u> **…** <u>with a therapist</u>	valeur: specificity

46.1	The treatment protocol is based on a CBT model for body dysmorphic disorder, [[emphasising the role of negatively reinforced avoidance and safety seeking behaviours (such as mirror checking and camouflaging perceived physical defects) as maintaining factors of body dysmorphic disorder]].	The treatment protocol	t. CBT model	+val (inv.)	for body dysmorphic disorder	valeur: specificity
		avoidance	factors of body dysmorphic disorder	-val	negatively reinforced	valeur: specificity
		behaviours	factors of body dysmorphic disorder	-val	safety seeking	valeur: specificity
47.1	The treatment protocol has been validated in a previous trial,	The treatment protocol	validated	+val		
47.2	and the treatment effects are comparable with those [[gained in traditional face to face CBT]].[25]	treatment effects	t. comparable with those [[gained in traditional face to face CBT]]	+val (inv.)	comparable	quant: amount (intensified)
					traditional	valeur: specificity
					face to face	extent: proximity: space
48.1	The main intervention in BDD-NET is systematic exposure to fear [[eliciting situations or events combined with response prevention until anxiety and urges to ritualise subside (such as leaving home and refraining from compulsive mirror checking)]].	exposure to fear	systematic	+val		
		The main intervention	+val			intense: quality
		(participants)	anxiety	+sec	subside	quant: amount
		(participants)	urges to ritualise	-des +ten (inv.)	urges	intense: quality
					subside	quant: amount
		mirror checking	compulsive	-val +cap (inv)	refraining from	fulfil: actualisation
49.1	In total, BDD-NET consists of eight interactive modules delivered over 12 weeks, with the first five modules [[containing the core treatment components]].[23]	modules	t. interactive	+val (inv.)		
		treatment components	core	+val		intense: quality
		modules	the core treatment components	+val	the first five	quant: amount (+intensified order)

50.1	Each **module** is <u>**devoted**</u> to a special **theme**	**module**			<u>each</u>	quant: amount
		Each **module**		+val (inv.)	<u>**devoted**</u>	intense: relation
					<u>special</u> **theme**	valeur: specificity
50.2	and covers <u>**psychoeducation**</u>, a <u>cognitive behaviour</u> **conceptualization** <u>of body dysmorphic disorder</u>, <u>cognitive</u> **restructuring**, exposure and response prevention, <u>more</u> <u>on exposure and response prevention</u>, <u>values based</u> **behaviour change**, **difficulties** encountered during **treatment**, and prevention of relapse.	<u>**psychoeducation**</u>				valeur: specificity
		conceptualization			a <u>cognitive behaviour **…** of body dysmorphic disorder</u>	valeur: specificity
		restructuring			<u>cognitive</u>	valeur: specificity
		(**components**)			<u>more</u>	quant: amount (intensified)
					<u>on exposure and response prevention</u>	valeur: specificity
		behaviour change			<u>values based</u>	valeur: specificity
		treatment	**difficulties**	-val		
		module	covers **difficulties** encountered during **treatment**	+val +prop (inv.)		
51.1	To progress to the next module,					
51.2	participants <u>have to</u> **complete** homework assignments (such as reading text material, answering a quiz at the end of each module, filling out worksheets, or doing exposure and response prevention)				<u>have to</u> **complete**	intense: modality
51.3	and **report** to their therapist.				<u>have to</u> **report**	intense: modality
52.1	The participants had **contact** with an identified therapist <u>throughout the entire treatment</u>	**contact**			<u>throughout the entire treatment</u>	intensified extent: distribution: time

52.2	using a built-in email system on the BDD-NET webpage.					
53.1	Participants could log in					
53.2	and send emails at **<u>any time</u>**.				**<u>any time</u>**	intense: modality
54.1	<u>All</u> **homework assignments and questions** from the participants were **<u>reviewed</u>**	**(therapist)**		+ten (inv.)	<u>All</u> **homework assignments and questions**	quant: amount
					<u>reviewed</u>	intense: occurrence
54.2	and answered <u>within 36</u> **hours**, except on weekends.	**(response time frame)**		+val (inv.) +cap (inv.)	<u>36</u> **hours**	extent: distribution: time
55.1	The role of the therapist was mainly [[to guide and coach the participant throughout the treatment]], ‖ [[provide feedback on homework assignments]], ‖ [[answer questions from the participants]],‖ [[and consecutively grant access to the next treatment module]].					
56.1	The participants were notified by an automated text message (SMS)					
56.2	when they had a new email in the treatment platform from their therapist.					
57.1	**The therapists** [[guiding the participants through the treatment]] were <u>four</u> **clinical psychology students** [[who had **<u>completed</u>** their <u>basic</u> **clinical training** (320 hours)]] ‖ [[and had provided therapy in <u>milder</u> **cases** under **the supervision** of a <u>senior</u> **psychologist**]].	**The therapists / clinical psychology students**	t. entire figure	+cap (inv.)		
		clinical training		+val (inv.)	<u>basic</u>	valeur: specificity
					<u>(320 hours)</u>	extent: distribution: time
		cases			<u>milder</u>	intense: quality
		psychologist		+cap (inv.)	<u>senior</u>	intense: quality (titular ranking)

		the supervision	t. of a <u>senior</u> **psychologist**	+val (inv.)		
58.1	**The clinical psychology students** had <u>no</u> **prior experience** <u>of treating body dysmorphic disorder</u>	**The clinical psychology students**	t. entire figure	-cap (inv.)	<u>no</u> **prior experience** <u>of treating body dysmorphic disorder</u>	quant: amount + valeur: specificity
		prior experience		-val (inv.)	<u>no</u>	quant: amount
					<u>of treating body dysmorphic disorder</u>	valeur: specificity
58.2	but were <u>closely</u> **supervised** by the **lead** author (JE) with **weekly meetings** <u>throughout the trial</u>.	**supervision**	t. entire figure	+val (inv.)		
		supervised			<u>closely</u>	intense: occurrence
		author (JE)		+cap (inv.)	**<u>lead</u>**	intense: quality (authorial responsibility)
		meetings			**<u>weekly</u>**	intense: modality
					<u>throughout the trial</u>	extent: distribution: time
59.1	The duration of therapist contact and sent emails was automatically recorded by the BDD-NET platform.					
60.1	**Median therapist time** [[spent weekly per participant reading and answering emails]] was 13.2 minutes.					
61.1	To <u>ensure</u> **treatment integrity** and **adherence** to protocol	**treatment**	**integrity**	+val +ten (inv.)	<u>ensure</u>	fulfil: actualisation
		therapist	**adherence**	+ten	<u>ensure</u>	fulfil: actualisation
61.2	the **lead author** monitored the messages [[sent by the therapists throughout the entire treatment]],	**author**		+cap (inv.)	**<u>lead</u>**	intense: quality (authorial responsibility)
61.3	and provided **supervision**.	**supervision**	t. provided by the **<u>lead author</u>**	+val (inv.)		
62.1	Appendix 1 shows a screenshot of BDD-NET.					
63.1	Participants had access to the integrated email system on the BDD-NET webpage and	**access**		+val (inv.)	<u>unlimited</u>	quant: amount

	unlimited **access** to an identified therapist.					
64.1	They were given the opportunity to talk freely about their **experiences, thoughts, and feelings** about body dysmorphic disorder and [[how it affected their life]].	**experiences, thoughts, and feelings**			about body dysmorphic disorder	valeur: specificity
65.1	The therapist sent an **email at least once a week**,]].	**email**	t. figure #65.3	+val (inv.)	**at least once a week**	intense: modality (further intensified)
65.2	encouraging the participant to discuss **distressing** **life events**	**life events**	**distressing**	-react: imp		
65.3	and to promote problem solving					
66.1	The therapists used **skills** drawn from counselling techniques	**skills**			drawn from counselling techniques	valeur: specificity
66.2	and included minimal **encouragers**, reflecting, empathising, and summarising.	**encouragers**			minimal	quant: amount
67.1	All **emails** from the participants were **reviewed**	**The therapists**		+ten (inv.)	All **emails**	quant: amount
					reviewed	intense: occurrence
67.2	and **answered** within 36 hours,	**(response time frame)**		+val (inv.) +cap (inv.)	36 hours	extent: distribution: time
67.3	and participants were notified by an automated text message					
67.4	when they had a new email in the treatment platform.					
68.1	Treatment lasted 12 weeks,					
68.2	and none of the **participants** had any face to face **contact** with a therapist.	**Treatment**	t. entire figure	+val (inv.)		
		participants			none	quant: amount
		contact			any	quant: amount
					face to face … with a therapist	valeur: specificity
69.1	Non-directive **supportive therapy** [[delivered via the internet]] has been shown to reduce **symptoms** [[associated	**supportive therapy**	t. reduce **symptoms** [[associated with obsessive compulsive disorder]]	+val (inv.)	Non-directive … delivered via the internet	valeur: specificity
					has been shown	fulfil: actualisation

#	Text	Term	Appraisal	Code	Realisation	Category
	with obsessive compulsive disorder]],[34]	symptoms		+val (inv.)	reduce	quant: amount
					associated with obsessive compulsive disorder	valeur: specificity
69.2	though there are no reports of its efficacy for body dysmorphic disorder.	reports of its efficacy		-val (inv.)	no	quant: amount
					for body dysmorphic disorder	valeur: specificity
70.1	The supportive therapy served as a control for caregiver attention and the possible anxiety alleviating effect of sharing one's distress with a therapist	control			for caregiver attention	valeur: specificity
		one's	anxiety	+sec	alleviating	quant: amount
			distress	-happ		
		sharing one's distress with a therapist	anxiety alleviating effect	+val	possible	intense: modality
71.1	The same therapists [[that guided participants through BDD-NET]] delivered the supportive therapy.	therapists			The same … that guided participants through BDD-NET	valeur: specificity
72.1	Therapists spent a median of 6.3 minutes per participant per week [[reading || and answering emails]].					
73.1	To ensure treatment integrity,	treatment	integrity	+val +ten (inv.)	ensure	fulfil: actualisation
73.2	the lead author monitored the messages [[sent by the therapists throughout the entire treatment]]	author		+cap (inv.)	lead	intense: quality (authorial responsibility)
73.3	and provided supervision.	supervision	t. provided by the lead author	+val (inv.)		
74.1	No therapist drift (deviation from treatment protocol) was detected in either of the groups.	therapist	drift	+ten	No	quant: amount
		treatment	deviation	+val	No	quant: amount
		groups			either	quant: amount
75.1	Participants were randomised on a 1:1 ratio with simple randomisation with no constraints.	randomisation			simple … with no constraints	valeur: specificity
76.1	To prevent potential selection bias [[related to the randomisation procedure]],	randomisation procedure	bias	+val +ver (inv.)	prevent	fulfil: actualisation
					potential	intense: modality

76.2	an <u>external</u> **party** [not involved in the inclusion process] used a <u>true</u> **number service (www.random.org).**	**party**		+ver (inv.)	<u>external</u>	extent: proximity: space
		(random) number		+val (inv.)	<u>true</u>	valeur: authenticity
		service	t. <u>true</u> **(random) number**	+val (inv.)		
77.1	**Allocation concealment** was <u>ensured</u> through randomisation	**Allocation**	**concealment**	+val	<u>ensured</u>	fulfil: actualisation
77.2	after the decision [[to include each participant]] had been made.					
78.1	<u>Immediately</u> **after** <u>randomisation,</u> participants received information about [[which treatment they had been allocated to]] ‖ [[and how they could log on to the **secure website**]].	**(time between randomisation and allocation)**			<u>Immediately</u> **after**	intensified extent: proximity: time
		<u>website</u>	<u>secure</u>	+val		
79.1	Assessors in the trial remained masked to treatment allocation at baseline and three and six month follow-up.					
80.1	Because of the nature of the intervention, participants and therapists <u>were not</u> **blinded** to treatment.				<u>were not</u> **blinded**	fulfil: actualisation
81.1	<u>All</u> **participants** were assessed at baseline	**participants**			<u>All</u>	quant: amount
81.2	and then received 12 weeks of treatment.					
82.1	Follow-up times were three and six months from baseline (after treatment and three months after treatment, respectively).					
83.1	After the six month follow-up, participants in the supportive therapy group were offered BDD-NET					
83.2	and reassessed					
83.3	after receiving <u>12 weeks</u> of <u>additional</u> **treatment** <u>with BDD-NET</u>.	**treatment**			<u>12 weeks</u>	extent: distribution: time

#	Text	Term	Evaluation	+/-val	Circumstance	Category
					additional	quant: amount
					with BDD-NET	valeur: specificity
84.1	Participants also completed online self report **measures** at these time points,	**measures**			online	extent: proximity: space
					self report	valeur: specificity
84.2	a **method** [[that has been shown to be as **reliable** and as **valid** as written administration]].35,36	**method**	**reliable**	+val	has been shown	fulfil: actualisation
					as … as	intense: quality
			valid	+val	has been shown	fulfil: actualisation
					as … as	intense: quality
85.1	The primary outcome was **change** in severity of symptoms of body dysmorphic disorder [[assessed with the BDD-YBOCS [[administered by a clinician]]]].27	**change**			in severity of symptoms of body dysmorphic disorder	valeur: specificity
		(scale)		+val (inv.)	BDD-YBOCS	valeur: specificity
86.1	**The BDD-YBOCS** can be considered the **ideal** for assessing symptom severity	**The BDD-YBOCS**	**ideal**	+val		intense: quality
					for assessing symptom severity	valeur: specificity
86.2	and has a total score of 0-48, with a higher **score** [[indicating more **severe disorder**]].	higher **score**	more **severe** disorder	-val	higher	quant: amount (intensified)
		disorder	more **severe**	-val		intense: quality (further intensified)
87.1	Secondary outcomes included **responder status** [[defined as an empirically derived cut off point of ≥30% **reduction** from baseline on the BDD-YBOCS]].37	**responder status**	t. (**score**)	+val (inv.)	≥30% **reduction**	intense: quality quant: amount (intensified)
					from baseline	extent: proximity: time
					on the BDD-YBOCS	valeur: specificity
88.1	Remission was defined as **patients** [[who no longer met	**diagnostic criteria**			for body dysmorphic disorder	valeur: specificity

	diagnostic criteria <u>for body dysmorphic disorder</u>]].	**patients**	t. who no longer met **diagnostic criteria** <u>for body dysmorphic disorder</u>	+cap (inv.)		
89.1	Depressive symptoms were assessed with <u>the MADRS-S</u>.[28]	**(report)**		+val (inv.)	<u>the MADRS-S</u>	valeur: specificity
90.1	Clinician rated <u>global</u> **functioning** and **improvement** was assessed with the <u>global assessment of functioning</u> **scale** <u>(GAF)</u>[38] and the <u>clinical global improvement</u> **scale** <u>(CGI-I)</u>.[39]	**functioning**	**improvement**	+val +cap (inv.)	<u>global</u>	extent: distribution: space
		scale		+val (inv.)	<u>global assessment of functioning (GAF)</u>[38]	valeur: specificity
		scale		+val (inv.)	<u>clinical global improvement (CGI-I)</u>.[39]	valeur: specificity
91.1	Quality of life was assessed with the <u>EQ5D EuroQol (EQ5D)</u>.[40]	**(scale)**		+val (inv.)	<u>EQ5D EuroQol (EQ5D)</u>.[40]	valeur: specificity
92.1	<u>All</u> **outcomes** <u>other than</u> **BDD-YBOCS and MADRS-S** <u>at three months</u> <u>were not</u> **pre-specified** in the registration at clinicaltrials.gov because of an **administrative error**	**outcomes**		-cap (inv.)	<u>All</u>	quant: amount
					<u>other than</u> **BDD-YBOCS and MADRS-S** <u>at three months</u>	valeur: specificity
					<u>were not</u> **pre-specified**	fulfil: actualisation
		administrative	**error**	-val -cap		
		BDD-YBOCS and MADRS-S			<u>at three months</u>	extent: proximity: time
92.2	but were included in the <u>original</u> **trial protocol** [[**approved** by the <u>regional</u> **ethics committee** <u>before the start of the trial</u>]].	**trial protocol**	t. but (<u>All</u> **outcomes** <u>other than</u> **BDD-YBOCS and MADRS-S** <u>at three months</u>) were included	+val (inv.)	<u>original</u>	extent: proximity: time
			approved by the <u>regional</u> **ethics committee**	+val +prop (inv.)		
		ethics committee			<u>regional</u>	extent: distribution: space
93.1	To <u>ensure</u> **quality** of **assessments**,	**assessments**	**quality**	+val	<u>ensure</u>	fulfil: actualisation
93.2	clinicians in this trial practiced together on case examples with **excellent** **reliability** <u>between</u>	**reliability**	**excellent**	+val	<u>between raters</u>	intense: quality + valeur: specificity

	raters (**intraclass correlation 0.95, 95% confidence interval 0.89 to 0.98**).	**intraclass correlation**		+val (inv.)	0.95, 95%	quant: amount
		confidence interval		+val (inv.)	0.89 to 0.98	quant: amount
94.1	The occurrences of **adverse events** were recorded mid-treatment and after treatment with a self report **form**.[41]	**events**	**adverse**	-val	occurrences	fulfil: actualisation
		form			self report	valeur: specificity
		(investigators)	t. entire figure	+prop (inv.)		
95.1	**Treatment credibility** and **expectancy** of **improvement** were recorded at week two with the C **scale** [[(included post hoc after trial registration)]].[42]	**Treatment**	**credibility**	+val		
			improvement	+val	**expectancy**	intense: modality
		scale		+val (inv.)	C…[42]	valeur: specificity
		(investigators)	t. entire figure	+prop (inv.)		
96.1	**We** received **input** from **patients** from the **BDD-NET** pilot **trial** on the treatment material.	**We (investigators)**	t. entire figure	+prop (inv.)		
		input			on the treatment material	valeur: specificity
		patients			from the **BDD-NET** pilot **trial**	valeur: specificity
		BDD-NET trial			pilot	quant: amount
97.1	No **patients** were involved in setting the research question or the outcome measures,	**We (investigators)**	t. entire figure	+prop (inv.)		
		patients			No	quant: amount
97.2	nor were they involved in developing plans for recruitment, design, or implementation of the study.	**We (investigators)**	t. entire figure	+prop (inv.)		
98.1	No **patients** were asked to advise on interpretation or writing up of results.	**We (investigators)**	t. entire figure	+prop (inv.)		
		patients			No	quant: amount

99.1	We carefully **assessed** the **burden** of the **trial interventions** on the patients	**We (investigators)**	t. entire figure	+prop (inv.)	carefully **assessed**	intense: occurrence
		trial interventions	**burden**	-val	on the patients	valeur: specificity
99.2	by collecting **information** about **adverse** events, quality of life, and time [[spent on the treatment]].	**information**			about **adverse** events, quality of life, and time [[spent on the treatment]].	valeur: specificity
		events	**adverse**	-val		
100.1	**We** plan **to disseminate** the results of the research to study participants and to the Swedish OCD **Foundation.**	**We (investigators)**	t. entire figure	+prop (inv.)	plan **to disseminate**	fulfil: actualisation
		Foundation			Swedish	extent: distribution: space
					OCD	valeur: specificity
101.1	We powered the study					
101.2	to be able to detect at least a medium **standardised effect** size (Cohen's d).	**standardised effect**		+val (inv.)	at least a medium … size (Cohen's d).	quant: amount (intensified)
102.1	We based **power calculations** on a previous pilot **trial** of BDD-NET and the **efficacy of online supportive therapy** for obsessive compulsive disorder.[25 34]	**power calculations**	t. entire figure	+val (inv.)		
		trial		+val (inv.)	pilot	quant: amount + extent: proximity: time
					BDD-NET	valeur: specificity
		efficacy of online supportive therapy		+val	for obsessive compulsive disorder	valeur: specificity
103.1	A **sample size** of 39 per **group** was required	**sample size**	t. entire figure 103.2	+val (inv.)	39 per group	quant: amount + extent: distribution: space
					required	intense: modality
103.2	to give 80% **power** and a two sided 5% **significance** for detecting a **mean difference** between groups of at least 4 and a **standard deviation** of 6.24 on the	**power**		+val (inv.)	80%	quant: amount
					for detecting…	valeur: specificity
		significance			two sided	extent: distribution: space

	BDD-YBOCS between BDD-NET and supportive therapy.				two sided 5%	quant: amount
					for detecting…	valeur: specificity
		mean difference			at least 4	quant: amount (intensified)
					between groups	extent: distribution: space
		standard deviation			6.24	quant: amount
					on the BDD-YBOCS between BDD-NET and supportive therap	valeur: specificity
104.1	We anticipated a **potential** 10% **dropout rate**,	**dropout rate**			**potential**	intense: modality
					10%	quant: amount
104.2	giving a **planned sample size** of at least 44 per group, or 88 in total.	**sample size**			**planned**	intense: modality
					least 44 per group, or 88 in total	quant: amount (intensified) extent: distribution: space
105.1	There were no **planned** interim **analyses** or **rules for stopping**.	interim **analyses / rules for stopping**			no	quant: amount
					interim	extent: proximity: time
					planned	intense: modality
106.1	**Analyses** were by intention to treat,	**Analyses**		+val (inv.) +ver (inv.)	intention to treat	valeur: specificity
106.2	with participants analysed in the group [[to which they had been randomised]].					
107.1	Missing data were deemed to be missing at random					
107.2	by using Little's missing completely at random **test**.	**test**		+val (inv.)	Little's missing completely at random **test**	valeur: specificity
108.1	Linear mixed **models** with maximum likelihood estimations were used	**Linear mixed models**		+val (inv.)	Linear mixed … with maximum likelihood estimations	valeur: specificity

108.2	to evaluate the **effect** of treatment group on the different outcomes.	**effect**			of treatment group	valeur: specificity
109.1	Such **models** take into account the differences in rate of change and **differences** in trajectories of change between individuals with repeated responses	**models**	t. entire sentence 109	+val (inv.)	Such	valeur: specificity
		differences			in trajectories of change between individuals with repeated responses	valeur: specificity
109.2	and use all the available **data** for each **participant**.[43]	**data**			all	quant: amount
		participant			each	quant: amount
110.1	The fixed part of **the model** included a treatment indicator **variable** (supportive therapy/BDD-NET), a time indicator **variable** (three or six months), and an interaction **effect** of treatment × time	**the model**			The fixed part	valeur: specificity
		variable			treatment indicator	valeur: specificity
					time indicator	valeur: specificity
		effect			interaction … of treatment × time	valeur: specificity
110.2	to allow for differential **change** between the two groups from the three to the six month follow-up.	**model**	t. entire figure	+val (inv.)		
		change			allow for	fulfil: actualisation
					differential	quant: amount
					between the two groups from the three to the six month follow-up	valeur: specificity
111.1	Baseline (before treatment) **scores** on each **outcome measure** were included as covariates.	**model**	t. entire figure	+val (inv.)		
		scores			Baseline (before treatment)	extent: proximity: time
					on each **outcome measure**	valeur: specificity + quant: amount
112.1	Participant varying **intercepts** were included as a random effect in the **model**.	**intercepts**			Participant varying	valeur: specificity
		model			a random effect	valeur: specificity
113.1	As therapist support **time** varied between the two treatment arms,	**time**			therapist support	valeur: specificity

113.2	it was included as an <u>additional</u> **covariate** in the **model**.	**covariate**	t. entire figure 113.1	+val (inv.)	<u>additional</u>	quant: amount
114.1	Because it <u>did not</u> **predict** outcome, however, (P=0.11-0.98)	**covariate**		-val (inv.)	<u>did not</u> **predict**	fulfil: actualisation
114.2	it was dropped from the final model.					
115.1	We used χ2 **tests** for categorical data	**tests**		+val (inv.)	<u>χ2</u>	valeur: specificity
115.2	and we used independent *t* **tests** for assessing differences between groups	**tests**	t. independent	+val (inv.)	<u>t</u>	valeur: specificity
115.3	when time was not a factor on the outcome variable.					
116.1	We carried out <u>post hoc</u> **analysis** <u>of participants in the supportive therapy arm [[who later crossed over to BDD-NET after the six month follow-up]]</u>	**analysis**			<u>post hoc</u>	extent: proximity: time
					<u>of participants in the supportive therapy arm [[who later crossed over to BDD-NET after the six month follow-up]]</u>	valeur: specificity
116.2	using <u>paired t</u> **tests**.		**Tests**	+val (inv.)	<u>paired t</u>	valeur: specificity
117.1	**Effect sizes** <u>within and between groups</u> were calculated as Cohen's d.	**Effect size**			<u>within and between groups</u>	extent: distribution: space
118.1	<u>All</u> **statistical analyses** were done in <u>STATA 13.1</u>.	**statistical analyses**	t. done in <u>STATA 13.1</u>	+val (inv.)	<u>All</u>	quant: amount
		(software)		+val (inv.)	<u>STATA 13.1</u>	valeur: specificity

Appendix 9 Sample ENGAGEMENT analysis (BMJ-1)

Key (following Martin & White, 2005; White, 2003)		
Type of monogloss = X if explicit / (X) if implicit	Type of heterogloss: contracting = X if explicit / (X) if implicit	Type of heterogloss: expanding = X if explicit / (X) if implicit
assert = Bare assertion re-assert = Reinforced assertion = **X** if explicit / (**X**) if implicit	deny = disclaim: deny counter = disclaim: counter pronounce = proclaim: pronounce endorse = proclaim: endorse justify = justification	entertain attribute

Sent. #	Text	Monogloss	Heterogloss	Type	Notes
1	Body dysmorphic disorder (BDD) is a psychiatric disorder characterised by a pervasive preoccupation with perceived defects in physical appearance accompanied by avoidance and time consuming compulsive behaviours, such as mirror gazing and excessive camouflaging to hide perceived defects.**[1]**	**X**		re-assert	
2	If left untreated, this is a chronic and unremitting disorder that is associated with functional impairment across multiple life domains, relatively high rates of psychiatric admissions to hospital, substance dependence, and suicidality.**[2-4]**	**X**		re-assert	
3	**Although** the disorder is often underdetected and underdiagnosed within the mental health services,[5,6] **epidemiological studies show** that it is a common mental health problem, with a prevalence ranging from 0.7% to 2.2% in the general population.[7-10]		X X	counter endorse	
4	It is common for those with body dysmorphic disorder to seek non-psychiatric care, such as dermatological treatment or plastic surgery, in an attempt to "fix" the perceived defects; **however**, such interventions rarely work and can lead to a deterioration of symptoms.[11,12]		X	counter	
5	Evidence based treatments for body dysmorphic disorder include psychopharmacological treatment and cognitive behaviour therapy (CBT).**[13-16]**	**X**		re-assert	
6	**Guidance from the National Institute for Health and Clinical Excellence (NICE) recommends** that adults should be offered the choice of either a course of a selective serotonin response inhibitor or specialised CBT that deals with the key features of the disorder.[17]		X	attribute	attributed proposal
7	There is, **however**, a gap between supply and demand of CBT because of various factors, such as a lack of trained therapists, direct and indirect costs associated with treatment, and geographical barriers that prevent people with body dysmorphic disorder from receiving specialized CBT.[18-20]	**X**	X	counter re-assert	countering NICE's recommendation
8	In two surveys, **only 10-17% of people with body dysmorphic concerns reported** that they had received an empirically supported psychotherapy (such as CBT), and 19-34% reported that they had received an SSRI.[19,20]		X	attribute	

#	Text				Notes
9	**Thus**, one of NICE's key priorities for implementation—namely, that each primary care trust, mental healthcare trust, and children's trust that provides mental health services should have access to a specialist multidisciplinary team offering age appropriate care—is currently far from reality.[17]		X	justify	
10	The growth in demand for mental healthcare exceeds available National Health Service (NHS) resources in the United Kingdom, and this gap **is likely to** increase up to 2020.[21]	**X**	X	re-assert entertain	
11	Cost pressures require that providers find innovative ways to deliver services.		X	justify	Implicit '**thus**' conjunction
12	**The UK government's mental health strategy "no health without mental health"[22] recommends** the increased use of information and communication technology to improve care and access to services.		X	attribute	attributed proposal; Unpacked gram.metaphor: recommends that information and communication should be used more to…
13	UK government initiatives such as "Digital First" aim to reduce unnecessary face to face contact between patients and healthcare professionals.[21]	**X**		re-assert	
14	**Many people with body dysmorphic disorder report** that one important reason for not seeking treatment is related to feelings of shame and stigma associated with their concerns about appearance, making telecare options potentially suitable.[19,20]		X X	attribute justify	Implicit '**thus**' conjunction
15	Internet based CBT is a burgeoning area of mental health aimed at increasing access to specialized behavioural treatments.	X		assert	
16	In some countries (such as Sweden, Australia, and the Netherlands) internet based CBT has been implemented as part of the regular healthcare system and is efficacious and cost effective for a wide range of mental health disorders.[23,24]	**X**		re-assert	
17	With the primary aim of increasing access to evidence based care for body dysmorphic disorder, we recently developed a therapist guided internet based CBT programme for body dysmorphic disorder (BDD-NET).	X		assert	
18	In a pilot study, this **was found** to be safe, highly acceptable to patients, and **potentially** efficacious.[25]		X X X	endorse (*2) entertain	
19	Crucially, the treatment required only a fraction of the therapist time associated with regular CBT.	X		assert	
20	We evaluated the efficacy of BDD-NET compared with online supportive therapy in the management of adults with body dysmorphic disorder.	X		assert	
21	Supportive therapy was chosen as a control **as** most patients report that they receive non-specific talking therapy when they seek help.[19]		X	justify	
22	We **hypothesised** that BDD-NET **would** be superior to online supportive therapy in reducing symptoms, as well as other psychiatric symptoms, and improve quality of life.		X	entertain	
23	This was a single blind parallel group superiority trial conducted at Karolinska Institutet from November 2013 to January 2015.	X		assert	
24	Participants were randomly assigned to 12 weeks of BDD-NET (n=47) or online supportive therapy (n=47) in a 1:1 ratio without restriction.	X		assert	

#	Statement	Col3	Col4	Speech act	Justification
25	Both groups were followed for three months after the end of treatment (six months from baseline).	X		assert	
26	This follow-up point was **not** included in the trial registration (clinicaltrials.gov) because of an administrative error **but** was included in the original study protocol.		X X	deny counter	
27	Participants randomised to supportive therapy were offered BDD-NET after the six month follow-up assessments.	X		assert	
28	**No** changes to methods were made after the trial started.		X	deny	
29	The study is reported in accordance to the Consolidated Standards for Reporting Trials (CONSORT) statement for non-pharmacological treatments.[26]	X		assert	
30	Eligible participants were individuals with access to the internet, aged 18 or over, and with a principal diagnosis of body dysmorphic disorder according to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5),[1] with a score of at least 20 on the modified Yale-Brown obsessive-compulsive scale (BDD-YBOCS).[27]	X		assert	
31	Exclusion criteria were changes in psychotropic drug treatment within two months before enrolment, completed CBT for body dysmorphic disorder within the past 12 months, current substance dependence, bipolar disorder or psychosis, acute suicidal ideation, a severe personality disorder that could jeopardize participation in treatment (such as borderline personality disorder with self harm), and concurrent psychological treatment.	X		assert	
32	Participants who were taking psychotropic drugs and had been taking a stable dose for at least two months before enrolment were asked to keep their dose stable during the study period.	X		assert	
33	Participants were recruited from all over Sweden.	X		assert	
34	Flyers were distributed to psychiatrists and general practitioners throughout Sweden with information about the study.	X		assert	
35	In addition, the study was advertised in national newspapers.	X		assert	
36	Interested applicants had to register on the study's secure website and complete an online screening consisting of the Montgomery-Åsberg depression rating scale self report (MADRS-S),[28] alcohol use disorders identification test,[29] drug user disorders identification test,[30] body dysmorphic disorder questionnaire,[31] and general background information.	X X		assert (*2)	
37	The body dysmorphic disorder questionnaire is a screening instrument that **has shown** excellent sensitivity and specificity.[31]		X (X)	endorse	Implicit justification of the proposition 'Using the BDD questionnaire was a good choice'
38	Potentially suitable participants underwent a structured diagnostic interview with a clinical psychologist or with a trained student in the final semester of a five year clinical psychology programme.	X		assert	
39	The interviews were conducted over telephone, which is a reliable administration format for structured psychiatric assessments.**[32]**	X **X**	(X)	assert re-assert	Implicit justification of the proposition 'Using telephone interviews questionnaire was a good choice'

40	To establish a diagnosis of body dysmorphic disorder, we used the structured clinical interview for DSM-IV axis I disorders, with an added question about the presence of repetitive behaviours to reflect the updates made to the diagnostic criteria of body dysmorphic disorder in DSM-5.	X		assert	
41	The mini-international neuropsychiatric interview was used to determine the presence of other comorbid psychiatric disorders.[33]	X		assert	
42	All assessors had received extensive training in structured diagnostic interviews.	X		assert	
43	To ensure reliability of diagnostic procedure and eligibility criteria, a consultant psychiatrist reviewed each case and made the final decision on enrolment.	X X		assert (*2)	
44	BDD-NET is delivered through a tailored online platform with a dedicated hospital server with encrypted traffic and an authentication login function to guarantee participants' confidentiality.	X		assert	
45	Treatment lasted 12 weeks, and **none** of the participants had any face to face contact with a therapist.	X	X	assert deny	
46	The treatment protocol is based on a CBT model for body dysmorphic disorder, emphasizing the role of negatively reinforced avoidance and safety seeking behaviours (such as mirror checking and camouflaging perceived physical defects) as maintaining factors of body dysmorphic disorder.	X X		assert (*2)	
47	The treatment protocol has been validated in a previous trial, and the treatment effects are comparable with those gained in traditional face to face CBT.[25]	X **X**		assert re-assert	
48	The main intervention in BDD-NET is systematic exposure to fear eliciting situations or events combined with response prevention until anxiety and urges to ritualise subside (such as leaving home and refraining from compulsive mirror checking).	X		assert	
49	In total, BDD-NET consists of eight interactive modules delivered over 12 weeks, with the first five modules containing the core treatment components.[23]	**X**		re-assert	
50	Each module is devoted to a special theme and covers psychoeducation, a cognitive behaviour conceptualization of body dysmorphic disorder, cognitive restructuring, exposure and response prevention, more on exposure and response prevention, values based behaviour change, difficulties encountered during treatment, and prevention of relapse.	X X		assert (*2)	
51	To progress to the next module participants have to complete homework assignments (such as reading text material, answering a quiz at the end of each module, filling out worksheets, or doing exposure and response prevention) and report to their therapist.	X X		assert (*2)	
52	The participants had contact with an identified therapist throughout the entire treatment using a built-in email system on the BDD-NET webpage.	X		assert	
53	Participants could log in and send emails at any time.	X X		assert (*2)	
54	All homework assignments and questions from the participants were reviewed and answered within 36 hours, except on weekends.	X X		assert (*2)	
55	The role of the therapist was mainly to guide and coach the participant throughout the treatment, provide feedback on homework assignments, answer questions from the participants, and consecutively grant access to the next treatment module.	X		assert	
56	The participants were notified by an automated text message (SMS) when they had a new email in the treatment platform from their therapist.	X		assert	

57	The therapists guiding the participants through the treatment were four clinical psychology students who had completed their basic clinical training (320 hours) and had provided therapy in milder cases under the supervision of a senior psychologist.	X X		assert (*2)	
58	The clinical psychology students had **no** prior experience of treating body dysmorphic disorder **but** were closely supervised by the lead author (JE) with weekly meetings throughout the trial.		X X	deny counter	
59	The duration of therapist contact and sent emails was automatically recorded by the BDD-NET platform.	X		assert	
60	Median therapist time spent weekly per participant reading and answering emails was 13.2 minutes.	X		assert	
61	To ensure treatment integrity and adherence to protocol, the lead author monitored the messages sent by the therapists throughout the entire treatment, and provided supervision.	X X		assert (*2)	
62	Appendix 1 shows a screenshot of BDD-NET.	X		assert	
63	Participants had access to the integrated email system on the BDD-NET webpage and unlimited access to an identified therapist.	X		assert	
64	They were given the opportunity to talk freely about their experiences, thoughts, and feelings about body dysmorphic disorder and how it affected their life.	X		assert	
65	The therapist sent an email at least once a week, encouraging the participant to discuss distressing life events and to promote problem solving.	X		assert	
66	The therapists used skills drawn from counselling techniques and included minimal encouragers, reflecting, empathising, and summarising.	X		assert	
67	All emails from the participants were reviewed and answered within 36 hours, and participants were notified by an automated text message when they had a new email in the treatment platform.	X X X		assert (*3)	
68	Treatment lasted 12 weeks, and **none** of the participants had **any** face to face contact with a therapist.	X	X	assert deny	
69	Non-directive supportive therapy delivered via the internet **has been shown** to reduce symptoms associated with obsessive compulsive disorder,[34] **though** there are **no** reports of its efficacy for body dysmorphic disorder.		X X X	endorse counter deny	
70	The supportive therapy served as a control for caregiver attention and the possible anxiety alleviating effect of sharing one's distress with a therapist.		X	justify	Implicit '**thus**' conjunction
71	The same therapists that guided participants through BDD-NET delivered the supportive therapy.	X		assert	
72	Therapists spent a median of 6.3 minutes per participant per week reading and answering emails.	X		assert	
73	To ensure treatment integrity, the lead author monitored the messages sent by the therapists throughout the entire treatment and provided supervision.	X X		assert (*2)	
74	**No** therapist drift (deviation from treatment protocol) was detected in either of the groups.		X	deny	
75	Participants were randomised on a 1:1 ratio with simple randomisation with no constraints.	X		assert	

76	To prevent potential selection bias related to the randomisation procedure, an external party not involved in the inclusion process used a true number service (www.random.org).	X		assert	
77	Allocation concealment was ensured through randomisation after the decision to include each participant had been made.	X		assert	
78	Immediately after randomisation, participants received information about which treatment they had been allocated to and how they could log on to the secure website.	X		assert	
79	Assessors in the trial remained masked to treatment allocation at baseline and three and six month follow-up.	X		assert	
80	Because of the nature of the intervention, participants and therapists **were not** blinded to treatment.		X	deny	
81	All participants were assessed at baseline and then received 12 weeks of treatment.	X X		assert (*2)	
82	Follow-up times were three and six months from baseline (after treatment and three months after treatment, respectively).	X		assert	
83	After the six month follow-up, participants in the supportive therapy group were offered BDD-NET and reassessed after receiving 12 weeks of additional treatment with BDD-NET.	X X		assert (*2)	
84	Participants also completed online self report measures at these time points, a method that **has been shown** to be as reliable and as valid as written administration.[35,36]	X	X (X)	assert endorse	Implicit justification of the proposition 'Using online self report measures was a good choice'
85	The primary outcome was change in severity of symptoms of body dysmorphic disorder assessed with the BDDYBOCS administered by a clinician.[27]	X		assert	
86	The BDD-YBOCS **can be considered** the ideal for assessing symptom severity and has a total score of 0-48, with a higher score indicating more severe disorder.	X	X	entertain assert	
87	Secondary outcomes included responder status defined as an empirically derived cut off point of ≥30% reduction from baseline on the BDD-YBOCS.[37]	X		assert	
88	Remission was defined as patients who no longer met diagnostic criteria for body dysmorphic disorder.	X		assert	
89	Depressive symptoms were assessed with the MADRS-S.[28]	X		assert	
90	Clinician rated global functioning and improvement was assessed with the global assessment of functioning scale (GAF)[38] and the clinical global improvement scale (CGI-I).[39]	X		assert	
91	Quality of life was assessed with the EQ5D EuroQol (EQ5D).[40]	X		assert	
92	All outcomes other than BDD-YBOCS and MADRS-S at three months **were not** pre-specified in the registration at clinicaltrials.gov because of an administrative error **but** were included in the original trial protocol approved by the regional ethics committee before the start of the trial.		X X	deny counter	
93	To ensure quality of assessments, clinicians in this trial practiced together on case examples with excellent reliability between raters (intraclass correlation 0.95, 95% confidence interval 0.89 to 0.98).	X		assert	

94	The occurrences of adverse events were recorded mid-treatment and after treatment with a self report form.[41]	X		assert	
95	Treatment credibility and expectancy of improvement were recorded at week two with the C scale (included post hoc after trial registration).[42]	X		assert	
96	We received input from patients from the BDD-NET pilot trial on the treatment material.	X		assert	
97	**No** patients were involved in setting the research question or the outcome measures, **nor** were they involved in developing plans for recruitment, design, or implementation of the study.		X X	deny (*2)	
98	**No** patients were asked to advise on interpretation or writing up of results.		X	deny	
99	We carefully assessed the burden of the trial interventions on the patients by collecting information about adverse events, quality of life, and time spent on the treatment.	X		assert	
100	We plan to disseminate the results of the research to study participants and to the Swedish OCD Foundation.	X		assert	
101	We powered the study to be able to detect at least a medium standardised effect size (Cohen's d).	X		assert	
102	We based power calculations on a previous pilot trial of BDD-NET and the efficacy of online supportive therapy for obsessive compulsive disorder.[25 34]	X		assert	
103	A sample size of 39 per group was required to give 80% power and a two sided 5% significance for detecting a mean difference between groups of at least 4 and a standard deviation of 6.24 on the BDD-YBOCS between BDD-NET and supportive therapy.	X		assert	
104	We anticipated a potential 10% dropout rate, giving a planned sample size of at least 44 per group, or 88 in total.	X	(X)	assert	Implicit entertaining of the proposition 'there will be a 10% dropout rate'
105	There were **no** planned interim analyses or rules for stopping.		X	deny	
106	Analyses were by intention to treat, with participants analysed in the group to which they had been randomised.	X		assert	
107	Missing data were deemed to be missing at random by using Little's missing completely at random test.	X		assert	
108	Linear mixed models with maximum likelihood estimations were used to evaluate the effect of treatment group on the different outcomes.	X		assert	
109	Such models take into account the differences in rate of change and differences in trajectories of change between individuals with repeated responses and use all the available data for each participant.[43]	**X X**	X	re-assert (*2) justify	Implicit '**because**' conjunction
110	The fixed part of the model included a treatment indicator variable (supportive therapy/BDD-NET), a time indicator variable (three or six months), and an interaction effect of treatment × time to allow for differential change between the two groups from the three to the six month follow-up.	X		assert	
111	Baseline (before treatment) scores on each outcome measure were included as covariates.	X		assert	

112	Participant varying intercepts were included as a random effect in the model.	X		assert	
113	As therapist support time varied between the two treatment arms, it was included as an additional covariate in the model.	X	(X)	assert	Implicit justification of the proposition 'Including therapist support time as an additional covariate was a good choice'
114	Because it did not predict outcome, **however**, (P=0.11-0.98) it was dropped from the final model.		X (X)	counter	Implicit justification of the proposition 'Excluding therapist support time as an additional covariate was a good choice'
115	We used χ2 tests for categorical data and independent *t* tests for assessing differences between groups when time was not a factor on the outcome variable.	X		assert	
116	We carried out post hoc analysis of participants in the supportive therapy arm who later crossed over to BDD-NET after the six month follow-up using paired *t* tests.	X		assert	
117	Effect sizes within and between groups were calculated as Cohen's d.	X		assert	
118	All statistical analyses were done in STATA 13.1.	X		assert	

Appendix 10 Sample PERIODICITY analysis (higher-level Themes/News in BMJ-1)

macroTheme 1

Introduction

Body dysmorphic disorder (BDD) is a psychiatric disorder characterised by a pervasive preoccupation with perceived defects in physical appearance accompanied by avoidance and time consuming compulsive behaviours, such as mirror gazing and excessive camouflaging to hide perceived defects.[1] If left untreated, this is a chronic and unremitting disorder that is associated with functional impairment across multiple life domains, relatively high rates of psychiatric admissions to hospital, substance dependence, and suicidality.[2-4] Although the disorder is often underdetected and underdiagnosed within the mental health services,[5,6] epidemiological studies show that it is a common mental health problem, with a prevalence ranging from 0.7% to 2.2% in the general population.[7-10] It is common for those with body dysmorphic disorder to seek non-psychiatric care, such as dermatological treatment or plastic surgery, in an attempt to "fix" the perceived defects; however, such interventions rarely work and can lead to a deterioration of symptoms.[11,12] Evidence based treatments for body dysmorphic disorder include psychopharmacological treatment and cognitive behaviour therapy (CBT).[13-16]

hyperTheme 1.1

Guidance from the National Institute for Health and Clinical Excellence (NICE) recommends that adults should be offered the choice of either a course of a selective serotonin response inhibitor or specialized CBT that deals with the key features of the disorder.[17]

(elaboration of hyperTheme 1.1)

There is, however, a gap between supply and demand of CBT because of various factors, such as a lack of trained therapists, direct and indirect costs associated with treatment, and geographical barriers that prevent people with body dysmorphic disorder from receiving specialized CBT.[18-20] In two surveys, only 10-17% of people with body dysmorphic concerns reported that they had received an empirically supported psychotherapy (such as CBT), and 19-34% reported that they had received an SSRI.[19,20]

hyperNew 1.1

Thus, one of NICE's key priorities for implementation—namely, that each primary care trust, mental healthcare trust, and children's trust that provides mental health services should have access to a specialist multidisciplinary team offering age appropriate care—is currently far from reality.[17]

The growth in demand for mental healthcare exceeds available National Health Service (NHS) resources in the United Kingdom, and this gap is likely to increase up to 2020.[21] Cost pressures require that providers find innovative ways to deliver services.

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hyperTheme 1.2

The UK government's mental health strategy "no health without mental health"[22] recommends the increased use of information and communication technology to improve care and access to services.

(elaboration of hyperTheme 1.2)

UK government initiatives such as "Digital First" aim to reduce unnecessary face to face contact between patients and healthcare professionals.[21] Many people with body dysmorphic disorder report that one important reason for not seeking treatment is related to feelings of shame and stigma associated with their concerns about appearance, making telecare options potentially suitable.[19,20]

Internet based CBT is a burgeoning area of mental health aimed at increasing access to specialized behavioural treatments. In some countries (such as Sweden, Australia, and the Netherlands) internet based CBT has been implemented as part of the regular healthcare system and is efficacious and cost effective for a wide range of mental health disorders.[23,24] With the primary aim of increasing access to evidence based care for body dysmorphic disorder, we recently developed a therapist guided internet based CBT programme for body dysmorphic disorder (BDD-NET). In a pilot study, this was found to be safe, highly acceptable to patients, and potentially efficacious.[25] Crucially, the treatment required only a fraction of the therapist time associated with regular CBT.

macroNew 1

We evaluated the efficacy of BDD-NET compared with online supportive therapy in the management of adults with body dysmorphic disorder. Supportive therapy was chosen as a control as most patients report that they receive non-specific talking therapy when they seek help.[19] We hypothesised that BDD-NET would be superior to online supportive therapy in reducing symptoms, as well as other psychiatric symptoms, and improve quality of life.

macroTheme 2

Methods

Trial design

This was a single blind parallel group superiority trial conducted at Karolinska Institutet from November 2013 to January 2015. Participants were randomly assigned to 12 weeks of BDD-NET (n=47) or online supportive therapy (n=47) in a 1:1 ratio without restriction. Both groups were followed for three months after the end of treatment (six months from baseline). This follow-up point was not included in the trial registration (clinicaltrials.gov) because of an administrative error but was included in the original study protocol. Participants randomised to supportive therapy were offered BDD-NET after the six month follow-up assessments. No changes to methods were made after the trial started. The study is reported in accordance to the Consolidated Standards for Reporting Trials (CONSORT) statement for non-pharmacological treatments.[26]

hyperTheme 2.1

Participants

Eligible participants were individuals with access to the internet, aged 18 or over, and with a principal diagnosis of body dysmorphic disorder according to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5),[1] with a score of at least 20 on the modified Yale-Brown obsessive-compulsive scale (BDD-YBOCS).[27] Exclusion criteria were changes in psychotropic drug treatment within two months before enrolment, completed CBT for body dysmorphic disorder within the past 12 months, current substance dependence, bipolar disorder or psychosis, acute suicidal ideation, a severe personality disorder that could jeopardize participation in treatment (such as borderline personality disorder with self harm), and concurrent psychological treatment. Participants who were taking psychotropic drugs and had been taking a stable dose for at least two months before enrolment were asked to keep their dose stable during the study period.

hyperTheme 2.1.1

Recruitment and determination of eligibility

Participants were recruited from all over Sweden.

(elaboration of hyperTheme 2.1.1)

Flyers were distributed to psychiatrists and general practitioners throughout Sweden with information about the study. In addition, the study was advertised in national newspapers. Interested applicants had to register on the study's secure website and complete an online screening consisting of the Montgomery-Åsberg depression rating scale self report (MADRS-S),[28] alcohol use disorders identification test,[29] drug user disorders identification test,[30] body dysmorphic disorder questionnaire,[31] and general background information. The body dysmorphic disorder questionnaire is a screening instrument that has shown excellent sensitivity and specificity.[31] Potentially suitable participants underwent a

structured diagnostic interview with a clinical psychologist or with a trained student in the final semester of a five year clinical psychology programme. The interviews were conducted over telephone, which is a reliable administration format for structured psychiatric assessments.[32] To establish a diagnosis of body dysmorphic disorder, we used the structured clinical interview for DSM-IV axis I disorders, with an added question about the presence of repetitive behaviours to reflect the updates made to the diagnostic criteria of body dysmorphic disorder in DSM-5. The mini-international neuropsychiatric interview was used to determine the presence of other comorbid psychiatric disorders.[33] All assessors had received extensive training in structured diagnostic interviews. To ensure reliability of diagnostic procedure and eligibility criteria, a consultant psychiatrist reviewed each case and made the final decision on enrolment.

hyperTheme 2.2
Interventions

hyperTheme 2.2.1
BDD-NET
BDD-NET is delivered through a tailored online platform with a dedicated hospital server with encrypted traffic and an authentication login function to guarantee participants' confidentiality. Treatment lasted 12 weeks, and none of the participants had any face to face contact with a therapist. The treatment protocol is based on a CBT model for body dysmorphic disorder, emphasizing the role of negatively reinforced avoidance and safety seeking behaviours (such as mirror checking and camouflaging perceived physical defects) as maintaining factors of body dysmorphic disorder. The treatment protocol has been validated in a previous trial, and the treatment effects are comparable with those gained in traditional face to face CBT.[25] The main intervention in BDD-NET is systematic exposure to fear eliciting situations or events combined with response prevention until anxiety and urges to ritualise subside (such as leaving home and refraining from compulsive mirror checking).

In total, BDD-NET consists of eight interactive modules delivered over 12 weeks, with the first five modules containing the core treatment components.[23] Each module is devoted to a special theme and covers psychoeducation, a cognitive behaviour conceptualization of body dysmorphic disorder, cognitive restructuring, exposure and response prevention, more on exposure and response prevention, values based behaviour change, difficulties encountered during treatment, and prevention of relapse. To progress to the next module participants have to complete homework assignments (such as reading text material, answering a quiz at the end of each module, filling out worksheets, or doing exposure and response prevention) and report to their therapist.

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(elaboration of hyperTheme 2.2.1)
The participants had contact with an identified therapist throughout the entire treatment using a built-in email system on the BDD-NET webpage. Participants could log in and send emails at any time. All homework assignments and questions from the participants were reviewed and answered within 36 hours, except on weekends. The role of the therapist was mainly to guide and coach the participant throughout the treatment, provide feedback on homework assignments, answer questions from the participants, and consecutively grant access to the next treatment module. The participants were notified by an automated text message (SMS) when they had a new email in the treatment platform from their therapist. The therapists guiding the participants through the treatment were four clinical psychology students who had completed their basic clinical training (320 hours) and had provided therapy in milder cases under the supervision of a senior psychologist. The clinical psychology students had no prior experience of treating body dysmorphic disorder but were closely supervised by the lead author (JE) with weekly meetings throughout the trial. The duration of therapist contact and sent emails was automatically recorded by the BDD-NET platform. Median therapist time spent weekly per participant reading and answering emails was 13.2 minutes. To ensure treatment integrity and adherence to protocol, the lead author monitored the messages sent by the therapists throughout the entire treatment, and provided supervision. Appendix 1 shows a screenshot of BDD-NET.

hyperTheme 2.2.2
Online supportive therapy

(elaboration of hyperTheme 2.2.2)
Participants had access to the integrated email system on the BDD-NET webpage and unlimited access to an identified therapist. They were given the opportunity to talk freely about their experiences, thoughts, and feelings about body dysmorphic disorder and how it affected their life. The therapist sent an email at least once a week, encouraging the participant to discuss distressing life events and to promote problem solving. The therapists used skills drawn from counselling techniques and included minimal encouragers, reflecting, empathising, and summarising. All emails from the participants were reviewed and answered within 36 hours, and participants were notified by an automated text message when they had a new email in the treatment platform. Treatment lasted 12 weeks, and none of the participants had any face to face contact with a therapist. Non-directive supportive therapy delivered via the internet has been shown to reduce symptoms associated with obsessive compulsive disorder,[34] though there are no reports of its efficacy for body dysmorphic disorder. The supportive therapy served as a control for caregiver attention and the possible anxiety alleviating effect of sharing one's distress with a therapist. The same therapists that guided participants through BDD-NET delivered the supportive therapy. Therapists spent a median of 6.3 minutes per participant per week reading and answering emails. To ensure treatment integrity, the lead author monitored the messages sent by the therapists throughout the entire treatment and

hyperNew 2.2
No therapist drift (deviation from treatment protocol) was detected in either of the groups.

hyperTheme 2.3
Randomisation and masking

(elaboration of hyperTheme 2.3)
Participants were randomised on a 1:1 ratio with simple randomisation with no constraints. To prevent potential selection bias related to the randomisation procedure, an external party not involved in the inclusion process used a true number service (www.random.org). Allocation concealment was ensured through randomisation after the decision to include each participant had been made. Immediately after randomisation, participants received information about which treatment they had been allocated to and how they could log on to the secure website. Assessors in the trial remained masked to treatment allocation at baseline and three and six month follow-up. Because of the nature of the intervention, participants and therapists were not blinded to treatment.

hyperTheme 2.4
Assessment points and outcomes
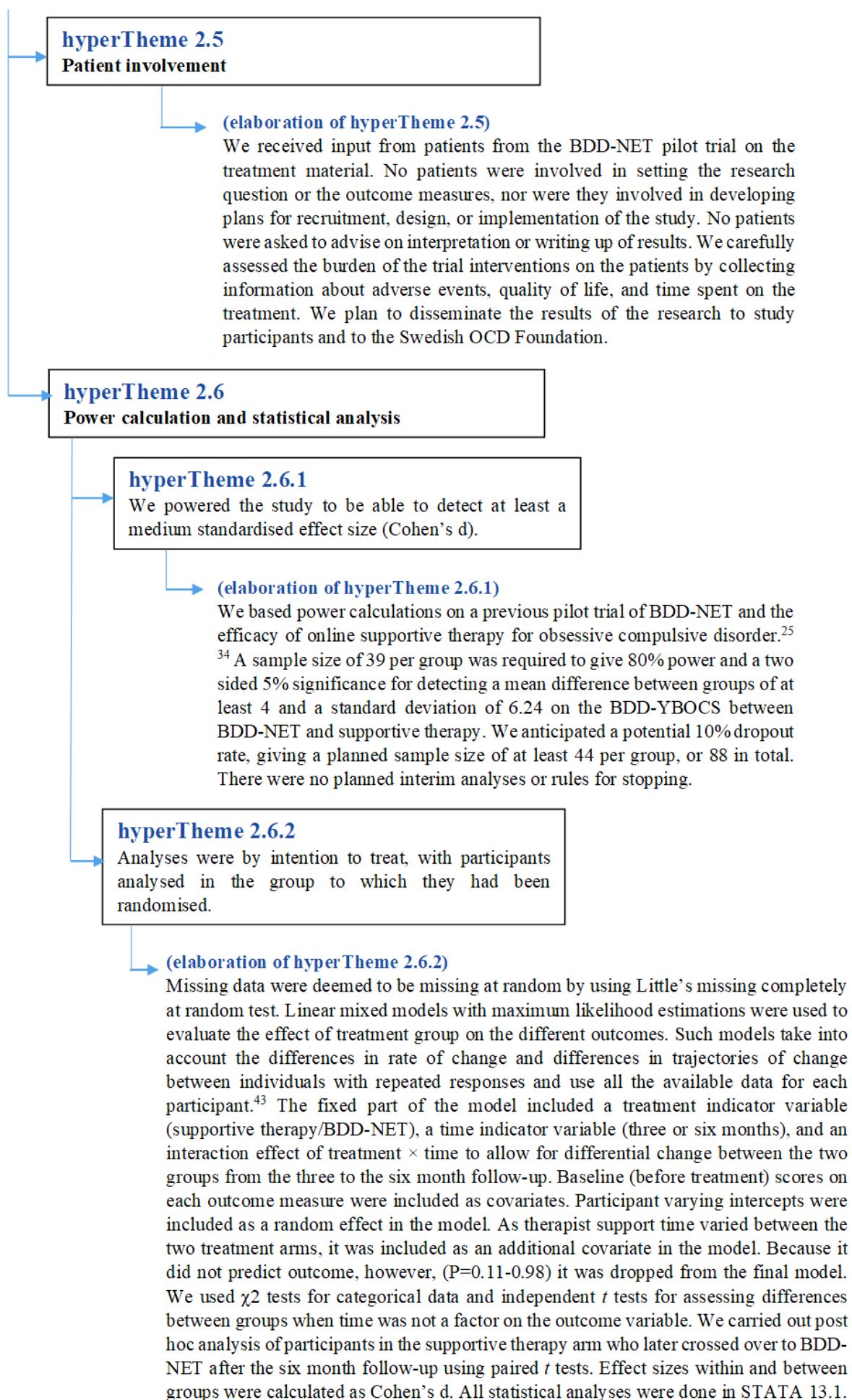
(elaboration of hyperTheme 2.4)
All participants were assessed at baseline and then received 12 weeks of treatment. Follow-up times were three and six months from baseline (after treatment and three months after treatment, respectively). After the six month follow-up, participants in the supportive therapy group were offered BDD-NET and reassessed after receiving 12 weeks of additional treatment with BDD-NET. Participants also completed online self report measures at these time points, a method that has been shown to be as reliable and as valid as written administration.[35,36]

The primary outcome was change in severity of symptoms of body dysmorphic disorder assessed with the BDDYBOCS administered by a clinician.[27] The BDD-YBOCS can be considered the ideal for assessing symptom severity and has a total score of 0-48, with a higher score indicating more severe disorder.

Secondary outcomes included responder status defined as an empirically derived cut off point of ≥30% reduction from baseline on the BDD-YBOCS.[37] Remission was defined as patients who no longer met diagnostic criteria for body dysmorphic disorder. Depressive symptoms were assessed with the MADRS-S.[28] Clinician rated global functioning and improvement was assessed with the global assessment of functioning scale (GAF)[38] and the clinical global improvement scale (CGI-I).[39] Quality of life was assessed with the EQ5D EuroQol (EQ5D).[40]

All outcomes other than BDD-YBOCS and MADRS-S at three months were not pre-specified in the registration at clinicaltrials.gov because of an administrative error but were included in the original trial protocol approved by the regional ethics committee before the start of the trial. To ensure quality of assessments, clinicians in this trial practiced together on case examples with excellent reliability between raters (intraclass correlation 0.95, 95% confidence interval 0.89 to 0.98). The occurrences of adverse events were recorded mid-treatment and after treatment with a self report form.[41] Treatment credibility and expectancy of improvement were recorded at week two with the C scale (included post hoc after trial registration).[42]

hyperTheme 2.5
Patient involvement

(elaboration of hyperTheme 2.5)
We received input from patients from the BDD-NET pilot trial on the treatment material. No patients were involved in setting the research question or the outcome measures, nor were they involved in developing plans for recruitment, design, or implementation of the study. No patients were asked to advise on interpretation or writing up of results. We carefully assessed the burden of the trial interventions on the patients by collecting information about adverse events, quality of life, and time spent on the treatment. We plan to disseminate the results of the research to study participants and to the Swedish OCD Foundation.

hyperTheme 2.6
Power calculation and statistical analysis

hyperTheme 2.6.1
We powered the study to be able to detect at least a medium standardised effect size (Cohen's d).

(elaboration of hyperTheme 2.6.1)
We based power calculations on a previous pilot trial of BDD-NET and the efficacy of online supportive therapy for obsessive compulsive disorder.[25] [34] A sample size of 39 per group was required to give 80% power and a two sided 5% significance for detecting a mean difference between groups of at least 4 and a standard deviation of 6.24 on the BDD-YBOCS between BDD-NET and supportive therapy. We anticipated a potential 10% dropout rate, giving a planned sample size of at least 44 per group, or 88 in total. There were no planned interim analyses or rules for stopping.

hyperTheme 2.6.2
Analyses were by intention to treat, with participants analysed in the group to which they had been randomised.

(elaboration of hyperTheme 2.6.2)
Missing data were deemed to be missing at random by using Little's missing completely at random test. Linear mixed models with maximum likelihood estimations were used to evaluate the effect of treatment group on the different outcomes. Such models take into account the differences in rate of change and differences in trajectories of change between individuals with repeated responses and use all the available data for each participant.[43] The fixed part of the model included a treatment indicator variable (supportive therapy/BDD-NET), a time indicator variable (three or six months), and an interaction effect of treatment × time to allow for differential change between the two groups from the three to the six month follow-up. Baseline (before treatment) scores on each outcome measure were included as covariates. Participant varying intercepts were included as a random effect in the model. As therapist support time varied between the two treatment arms, it was included as an additional covariate in the model. Because it did not predict outcome, however, (P=0.11-0.98) it was dropped from the final model. We used $\chi2$ tests for categorical data and independent t tests for assessing differences between groups when time was not a factor on the outcome variable. We carried out post hoc analysis of participants in the supportive therapy arm who later crossed over to BDD-NET after the six month follow-up using paired t tests. Effect sizes within and between groups were calculated as Cohen's d. All statistical analyses were done in STATA 13.1.

Appendix 11 A multi-functional perspective on phases as discourse semantic strategies: key language resources

Phase label	*metafunctional perspective*			*example*
	ideational	**interpersonal**	**textual**	
definition (disorder/ method/ participant/ criterion/ outcome measure/ therapist) (What / who is/was X?)	• provides a linguistic entity definition through co-elaboration	• graduation used to flag attitude; • generalised definitions phrased as reinforced assertions	• often function as higher level themes in descriptive reports and methodology recounts	*Body dysmorphic disorder (BDD) is a psychiatric disorder characterised by a pervasive preoccupation with perceived defects in physical appearance accompanied by avoidance and time-consuming compulsive behaviours, such as mirror gazing and excessive camouflaging to hide perceived defects.[1]*
description (What are the most important facts about X?)	• adds specificity through different types of state figures; • expresses typical occurrences using present tense figures;	• qualities, extending/enhancing/ co-elaborating entities, and occurrences inscribe or invoke attitude; • graduation resources can intensify or flag attitude	• elaborates definitions	*BDD-NET consists of eight interactive modules delivered over 12 weeks, with the first five modules containing the core treatment components.*
view (What does the medical community think about the treatment?)	• positioned figures with institutions as source entities / or evaluative (e.g., *approve*) occurrence figures with institutions as perpetrating entities	• attributed evaluation of the object of study	• macroTheme in embedded argumentative genres functioning as Evidence in research warrants	*The National Institute for Health and Care Excellence (NICE) advises general practitioners to reconsider treatment if patients show no response after 4-6 weeks of antidepressant use.*

burnishing (What has the scholarship shown?)	•positioned state figure with the enacted activity entities (e.g., *study*) or semiotic results (e.g., *findings*) as source entities	•heteroglossic endorsement and graduation used to flag a positive evalution of the field of study	•elaborates views by providing evidential support; •macroTheme in embedded descriptive reports and explanations functioning as Evidence; •in the orbital configuration, the figure position is given thematic prominence	*The STAR*D trial showed that bupropion was at least as effective as other switching[9] and augmenting agents.*
tarnishing (What are the limitations of the existing scholarship?)	•concession + state/occurrence figures focusing on the characteristics/qualities/ actions of the field of study	•heteroglossic countering/denial and graduation used to shift the prosodic value of the field of study from positive to negative	•elaborates views by negating adequate evidential support; •in the orbital configuration, "concession + the field of study" constitute marked Themes	*However, STAR*D was not powered to compare bupropion switching and augmentation strategies*
disputing (What are the drawbacks of the proposed treatment?)	•concession + state/occurrence figures focusing on the characteristics/qualities/ outcomes of the object of study	•heteroglossic countering/denial and graduation used to shift the prosodic value of the object of study from positive to negative	•elaborates the views by identifying the weaknesses of the proposed solutions; •in the orbital configuration, "concession + the object of study" constitute marked Themes	*(However) Some of the combinations carry a substantial risk of adverse effects and are not considered appropriate for initiation in primary care.*
conceding (Why is the proposed treatment still worth testing?)	•concession/rework: retraction + figures focusing on the characteristics/qualities/ outcomes of the object of study	•heteroglossic countering and/or graduation used to reinstate the positive prosodic value of the object of study	•elaborates the view by conceding the merits of the proposed solutions; •in the orbital configuration, "concession/retraction + the object of study" constitute marked Themes	*(On the other hand) There is a pharmacological rationale for adding a second antidepressant with a different and complementary mode of action to SSRIs or SNRIs.*
cause-effect (What triggers the disorder?)	•causal sequencing of present tense observational occurrences (construing implicated activity series)	•attitude can be invoked via causality	•elaborates the identified phenomenon	*Failure of GABAA receptors to adapt to these changes at parturition has been postulated to have a role in triggering post-partum depression.[24,25]*

hypotheses (What was hypothesized ?)	•positioned figures with investigators as source entities	•entertaining the positive trial outcomes	•part of the macroNews in research warrants	*We hypothesized that veterans randomly assigned to prazosin would have less frequent and less intense trauma-related nightmares, greater improvement in sleep quality, and greater improvement in overall clinical status (the three primary outcome measures) than veterans assigned to placebo after short-term treatment (10 weeks) and improvement in at least one of the three primary outcome measures after longer-term treatment (26 weeks).*
steps (How was the activity performed?)	•temporal sequence of enacted occurrences (construing facilitation activity series) with facilitators and facilitatory entities; •place and time entities adding specificity	•heteroglossic justification of the steps; •positive evaluation of the facilitating entities	•part of the macroNews in research warrants •can be part of the macroTheme in methodology recounts •higher level Themes if elaborated through a sequence of sub-steps	*After eligibility was established, consent agreed, and baseline data collected, we randomly allocated participants (1:1) to BA or CBT using computer-generated allocation.*
comment (What else should the reader know to appraise the method as ethical, rigorous, and/or credible?)	•a range of state or occurrence figures in the methodology recount that fall outside the temporal sequences that moment the trial; •often interrupt or encircle activity momenting; •comments can be linked via addition	•attitudinal propositions, which can be either monoglossic or heteroglossic, aimed at flagging or inscribing positive attitude towards the specific field of study (either RCT or RCT reporting).	•shifts focus to the axiology of the knowledge building process, briefly interrupting the flow of epistemological information in a methodology recount	*The authors vouch for the accuracy and completeness of the data and analyses and the fidelity of the trial to the protocol, available at NEJM.org.*

principles (How was the activity regulated?)	•causal sequence modulating enacted occurrence figures (construing regulated activity series)	•flagging scientific rigour	•part of macroTheme in methodology recounts that include Intervention protocol	*Women were excluded if they were pregnant or (if) nursing or if they declined to use an effective birth-control method.*
contributions (Who else contributed and how much?)	•figures that contain occurrences such as *contribute* or instigations such as *involve* (*somebody in doing sth*), suggesting the entity's contribution as a facilitator	•graduation used to flag positive attitude towards the contributors or quantify contributions; •heteroglossic denial used to negate contributions	•in the orbital configuration, thematic prominence is given to the contributors	*Patient and service user groups from Bristol and Manchester (PRIMER [Primary Care Research in Manchester Engagement Resource]) were involved in developing the full application.*